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Volume 15

FEBRUARY 1958

Number 2

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America's First Native Botanists

ohn and William Bartram, America's first botanists and the first eloquent and influential describers of the American landscape, were father and son. With the acquisition of the London, 1766, printing of John Bartram's *Journal* the Library of Congress now has all of the early editions of the major works of these two eminent men of science and literature.

In addition to this first edition of the Journal and two copies of the first edition of William Bartram's Travels and other works by both father and son mentioned in the text of this article, the Library possesses a rare broadside printing of the "Catalogue of American Trees, Shrubs and Herbacious Plants, most of which are now growing, and produce ripe Seed in John Bartram's Garden, near Philadelphia. The Seed and Growing Plants of which are disposed of on the most reasonable Terms." Not in Charles Evans' American Bibliography, this broadside was done by an unknown Philadelphia printer about 1790.

John Bartram was born in 1699 of a Quaker family in Pennsylvania. A simple farmer, self-educated, he turned himself, through his love of plants and the soil, into a natural scientist of world fame. Before he died, in 1777, Linnaeus had called him "the greatest natural botanist in the world"; his name appeared second only to Benjamin Franklin's on the list of founders of the American Philosophical Society; a member of the Royal Societies of London and Stockholm, he corresponded regularly with men like Peter

Collinson, Philip Miller, Peter Kalm, Dr. John Fothergill, Gronovius, and Linnaeus in Europe; and he was the friend of Franklin, James Logan, and Dr. Benjamin Rush in the colonies. He held the post of botanist to the King for the American colonies under George III, and he founded one of the first botanical gardens in America, at his home in Kingsessing, on the Schuylkill; this garden, in which men like Benjamin Franklin, George Washington and many others, came together to talk, is still flourishing and is part of the Philadelphia park system.

The scientific achievements of John Bartram and his influence were considerable. He and his friend Peter Collinson, a Quaker wool-merchant and a great English plantsman, played a large role in the development of gardening during the eighteenth century. They exchanged not only their ideas, drawings, and verbal descriptions, but many plants and cuttings. The list of plants introduced into England by John Bartram is a considerable one and includes the bush honeysuckle, fiery lilies, mountain laurel, degtooth violet, wild asters, gentian, hemlock, red and white cedar, and sugar maple. The correspondence between John Bartram and Peter Collinson, though they never met, lasted for more than 50 years; much of it was published in the next century in William Darlington's Memorials of John Bartram and Humphry Marshall, with Notices of Their Botanical Contemporaries (Philadelphia, 1849).

John Bartram traveled extensively in the American colonies. When he first began traveling for Peter Collinson, about 1734, he received seeds and plants from England in return for those he sent. Later Collinson sent clothes and presents for Bartram's family until that time when the boxes from America began to include seeds and plants for numerous subscribers; the price was then fixed at five pounds, five shillings a box-worth much more than that, of course, in Pennsylvania currency. Collinson interested many influential and wealthy friends in Bartram and these men also sent him funds with which to finance his trips and collecting expeditions. In the fall of 1736 Bartram made a trip to Schuylkill, going beyond the Blue Mountains; later that same year he traveled into the Jerseys. In 1737 and 1738 he made many trips, going as far south as Virginia. On a trip to the Catskills in 1742, he visited and made a friend of Cadwallader Colden, the famous physician, philosopher, agriculturalist, and student of the Indians.

In 1751 he published Observations on the Inhabitants, Climate, Soil, Rivers, Productions, Animals, and Other Matters Worthy of Notice. Made by Mr. John Bartram, in His Travels from Pensilvania to Onondago, Oswego and the Lake Ontario, in Canada. To Which is Annex'd, a Curious Account of the Cataracts at Niagara. By Mr. Peter Kalm, a Swedish Gentleman Who Travelled There (London, 1751). The Library has two copies of this exciting and highly readable book of but 94 pages.

The frontispiece of the Observations is a folding plate showing a fine copperplate engraving of the Iroquois Castle and the town of Oswego on the shores of the Onondago River and Lake Ontario. (See illustration.) The Observations describe a trip taken in 1743, in which year Johann Conrad Weiser, the famous Indian agent, set out to make a peace treaty between Vir-

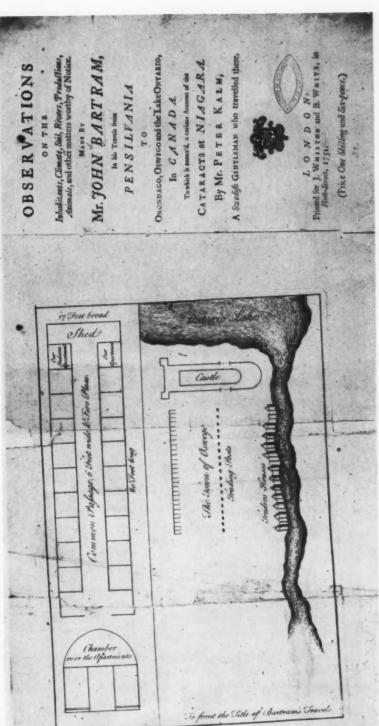
ginia and the Iroquois and Bartram took the opportunity to accompany him to the Iroquois Castle. Bartram had long contemplated a trip into central Pennsylvania and New York in order to collect seeds and specimens, the former for the London market and the latter for his botanical garden in Philadelphia. Also on the journey was the cartographer Lewis Evans. The following extracts from the Observations will be sufficient to indicate it as one of the most charming early travel narratives by an American:

The 3d of July 1743, I set out from my house on Skuylkil River, with Lewis Evans, and travelled beyond Perkiomy Creek the first day. The weather was exceeding hot. . . .

The 6th, we set forward and ascended the first Blue ridge . . . At this place we were warned by a well known alarm to keep our distance from an enraged rattle snake that had put himself into a coiled posture of defence, within a dozen yards of our path, but we punished his rage by striking him dead on the spot . . . We took notice that while provoked, he contracted the muscles of his scales so as to appear very bright and shining, but after the mortal stroke, his splendor became much diminished, this is likewise the case of many of our snakes. . . .

July 8. . . . I quartered in a trader's cabbin, and about midnight the Indians came and called up him and his squaw, who lay in a separate part where the goods were deposited, whether together or no I did not ask. She sold the Indians rum, with which being quickly intoxicated, men and woman began first to sing and then dance round the fire; then the women would run out to other cabbins and soon return, leaving the men singing and dancing the war dance, which continued all the next day. An Englishman when very drunk will fall fast asleep for the most part, but an Indian, when merry, falls to dancing, running, and shouting, which violent action probably may disperse the fumes of the liquor, that had he sat still or remained quiet, might have made him drowsy. . . .

The 14th. . . . the Indians fished for trout, but caught none, being provided with no other means of taking them but by poles sharpened at the end to strike them, and the water deep. . . . we found a Liching Pond, where we dined, the back parts of our country are full of these liching



Title page of John Bartram's OBSERVATIONS . . . (London, 1751), with chart of the town of Oswego.

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An ACCOUNT of

EAST-FLORIDA,

WITH A

JOURNAL,

KEPT BX

JOHN BARTRAM of Philadelphia,

BOTANIST to His MAJESTY

FOR

THE FLORIDAS;

UPON

A Journey from ST. AUGUSTINE up the River ST. JOHN's.

LONDON:

Sold by W. NICOLL, at No. 51, St. Paul's Church. Yand G. WOODFALL, Charing-Cross.

[Price Four Shillings.]

Title page of John Bartram's AN ACCOUNT OF EAST-FLORIDA . . . (London, 1766), recently acquired.

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The 16t steep are oak, che hand lawrel. swamp is lying on they sto impossible him of these one before open pa

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Peter the Calletter short I

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of a hil Fall, th It is be this! I it is! ponds, some are of black sulphureous mud, some of pale clay, the deer and elks are fond of licking this clay, so that the pond becomes enlarged to a rood or half an acre, the soil, I suppose contains some saline particles agreeable to the deer, who come many miles to one of these places . . .

The 16th, We began our journey up a little hill, steep and somewhat stoney, and then through oak, chesnut, huckleberries, and honeysuckles, the land poor, sometimes white pine, spruce and lawrel . . . through a great white pine, spruce swamp full of roots, and abundance of old trees lying on the ground or leaning against live ones, they stood so thick that we concluded it almost impossible to shoot a man at 100 yards distant, let him stand never so fair. The straight bodies of these trees stood so thick, a bullet must hit one before it could fly 100 yards, in the most open part. . . .

19. . . . After dinner we soon began to mount up a pretty steep hill, covered with oak, birch, ash, and higher up abundance of chesnut and some hickery. This is middling land, the produce the same for three miles as our land bears with us. It lies very high, and when cleared will have an extensive prospect of fertile vales on all sides. We then rode down a long rich hill of moderate descent, where grew abundance of gooseberries, all the trees were crouded with wild pigeons, which, I suppose, breed in these lofty shady trees. I found many fossils on this hill. . . .

20. . . . We observed the tops of the trees to be so close to one another for many miles together, that there is no seeing which way the clouds drive, nor which way the wind sets: and it seems almost as if the sun had never shone on the ground, since the creation.

Peter Kalm's accompanying Account of the Cataracts at Niagara, in the form of a letter dated "Albany, Sep. 2, 1750," is a short but animated narrative:

I told you, I would this summer, if time permitted, take a view of Niagara Fall, esteemed one of the greatest curiosities in the world. . . .

When you are at the Fall, and look up the river, you may see, that the river above the Fall is every where exceeding steep, almost as the side of a hill. When all this water comes to the very Fall, there it throws itself down perpendicular! It is beyond all belief the surprize when you see this! I cannot with words express how amazing it is! You cannot see it without being quite

red

terrified; to behold so vast a quantity of water falling headlong from a surprising height!

In that same year, 1751, John Bartram contributed a preface to the publication of Thomas Short's Medicina Britannica, reprinted, in Philadelphia, by Benjamin Franklin and David Hall from the London printing. The long title reads A Treatise on Such Physical Plants, as are Generally to be Found in the Fields or Gardens in Great-Britain: Containing a Particular Account of Their Nature, Virtues, and Uses. . . . to Which is Added, An Appendix: Containing the True Preparation, Preservation, Uses and Doses of Most Forms of Remedies Necessary for Private Families. The Third Edition. With a Preface by Mr. John Bartram, Botanist of Pennsylvania, and His Notes Throughout the Work, Shewing the Places Where Many of the Described Plants are to be Found in These Parts of America, Their Differences in Name, Appearance and Virtue, from Those of the Same Kind in Europe; and an Appendix, Containing a Description of a Number of Plants Peculiar to America, Their Uses, Virtues, &c. In the preface John Bartram wrote:

and certainly we have in our country, a great Variety of good medicinal Plants, which may be administred to the People with great Advantage, if properly adapted to the Season, Age and Constitution of the Patient; the Nature, Time and Progress of the Disease: Without which Caution, it is not likely that the Practice should succeed generally. But it is very common with our People, when a Root or Herb hath been given with good Success several Times in a particular Disease, and the Patient recovered soon after the taking of the Medicine, to applaud that Medicine exceedingly; then many that are sick of the same Disease, or any other, that hath near the like Symptoms, apply directly to this famed Specifick, expecting immediate Relief; which often failing, by Reason of its improper Application, as to Time, Constitution, or Nature of the Disease, many choice Medicines grow out of Repute again, are disregarded, and little Use made of them, especially if they are common and easy to come at; whereas if their Virtues were well known, and a skilful Person had the Administring of them, who knew how to properly correct and fit them to the Constitutions of the Patients, and join suitable Vehicles or Companions with them, to lead them to the Parts of the Body, where the Distemper lies, then those very Herbs or Roots, I suppose, might continue or increase in their Reputation.

Following the trip recorded in the Observations, and for the next 10 years, John Bartram continued to make many short journeys, into the Catskills, into Delaware and the Jerseys, and one trip up the Susquehanna. In 1753 he initiated his 14-year-old son William into botanical exploration with a trip into the Catskills. For the next few years the French and Indian Wars curtailed his traveling, but in 1760 he made a long-desired trip to Virginia and the Carolinas, returning again during the following year. Throughout his letters of this period, John Bartram continually referred to the South as the "terrestial paradise," using language which was to echo in the Romantic poets. All of the trips he had made thus far had yielded great botanical treasure, but he was still to embark upon the longest and most important journey of his career.

In 1765, in part because of Collinson's influence, John Bartram was appointed "Botanist to the King" and given a salary of 50 pounds a year. It was as Royal Botanist that he immediately set out to explore eastern Florida and to travel up the St. John's River, taking his son William with him. His important Journal of this trip was first published in London in 1766 as part of William Stork's An Account of East-Florida, with a Journal, Kept by John Bartram of Philadelphia, Botanist to His Majesty for the Floridas; upon a Journey from St. Augustine up the River St. John's. This is the most recent acquisition of the Rare Book Division. (See illustration.) William Stork was an English physician who wrote his account of Florida after residing there for some time; his interests were frankly promotional in nature. The joint Stork-Bartram Account appeared only six months after the first printing of Stork's account alone.

In 1769 the joint account was republished in London, this time in a largepaper edition as A Description of East-Florida, With a Journal, Kept by John Bartram of Philadelphia, Botanist to His Majesty for the Floridas; upon a Journey from St. Augustine up the River St. John's, as far as the Lakes. With Explanatory Botanical Notes. Illustrated with an Accurate Map of East-Florida, and Two Plans; One of St. Augustine, and the Other of the Bay of Espiritu Santo. The Third Edition, Much Enlarged and Improved. The Library has two copies of this, the best edition, in both of which all three plates are present, and in excellent condition.

After leaving St. Augustine, John Bartram went by land to the banks of the St. John's River, embarked at Picolata, and went up the river about 400 miles to its sources. He ascended on one side of the river and came down on the other, exploring on the way the various tributaries and connecting lakes. His Journal records weather conditions, types and conditions of the soil, Indian life or remains of Indian and Spanish settlements, a description of St. Augustine, good locations for forts, sources of fresh water, springs and fountains, varieties of plants, and how the Indians ate oranges with honey:

[December] 24th. Cold morning, thermometer 50, wind N. W. Blowed pretty fresh, but ceased towards night I and my son walked in the woods to observe the soil and plants, with a man that went to fell some trees for honey: he felled one that contained only some yellow wasps, that had taken up their winter-quarters in a pine-tree; we then walked to another hollow tree, wherein was a swarm of bees and some honey; but both the white people and the Indians often meet with such good success, as to find great quantities of honey and wax, even ten gallons, more or less, out of one tree; the Indians eat much of it with their venison and sour oranges, of which they cut off one end, then

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And the mechanics of an alligator's jaws:

[December] 28th. Saw many alligators, and killed one; 'tis certain that both jaws open by a joint nearly alike to both

And the earliest known description of the wood-rat:

[January] 10th. Pleasant morning; thermometer 50. The wolves howled, the first time I heard them in Florida; here we found a great nest of a wood-rat, built of long pieces of dry sticks, near 4 foot high and 5 in diameter, all laid confusedly together; on stirring the sticks to observe their structure, a large rat ran out, and up a very high saplin with a young one hanging to its tail.

And questions he asked of himself:

[January] 20th. Quere, whether or not some sorts of clay are not formed out of sea-shells ground minutely to powder in a long series of time?

And, as always, for they never ceased to fascinate him, a rattlesnake:

[January] 25th. Fine pleasant morning, although a little frost in the pine-lands . . . on the south side of the tumulus I found a very large rattle snake sunning himself, I suppose this to be his winter-quarters . . .

He explored many places and saw many things that William was later to redescribe in his own *Travels* after he went back over the same territory some years later.

It was, perhaps, in his influence on his son William that John Bartram made his greatest contribution. All of the elder Bartram's connections and attainments, the garden and its many notable visitors, the extensive correspondence from all over the world, the early trip into the Catskills, made a strong impression on his young son. Soon after the trip William took at the age of 14, his father was sending samples of his son's drawings to Peter Collinson.

Many of the elder Bartram's friends, other than Peter Collinson, took an interest in the young man. Benjamin Franklin offered to teach him the printing trade. At 18, he apprenticed himself to a Phila-

delphia merchant, but his interest in business was only desultory and when, in 1765, his father invited him to traverse the St. John's with him, William closed his shop and became an explorer.

This trip was most eventful for William Though he had seen plants in Bartram. his father's garden from his earliest childhood, he now saw them, uncultivated by man, growing freely in their native habitat. Florida and its exotic beauty fascinated him and when his father returned home he stayed, settling as an indigoplanter on the St. John's River. In 1772 Dr. John Fothergill, a London physician, botanist, Quaker, and good friend of John Bartram, agreed to back a journey of botanical exploration for William into East and West Florida. Fothergill agreed to pay 50 pounds a year for two years and the expenses of packing and shipping botanical specimens; in return William was to send him curious plants and seeds and drawings of birds, reptiles, insects, and plants.

In April 1773 William Bartram set out on his Southern travels, which lasted five, not two, years and which resulted not only in "the discovery of rare and useful productions of nature, chiefly in the vegetable kingdom" but also in his Travels through North & South Carolina, Georgia, East & West Florida, the Cherokee Country, the Extensive Territories of the Muscogulges, or Creek Confederacy, and the Country of the Chactaws; Containing an Account of the Soil and Natural Productions of Those Regions, Together with Observations on the Manners of the Indians. Embellished with Copper-Plates (Philadelphia, 1791), a book which was the first genuine and artistic interpretation of the American landscape and which was to fascinate and influence Romantic poets and philosophers as well as nature-lovers throughout the world.

Between his return home in January 1778 and his death in 1823, many honors came to William Bartram. He became a partner in the garden with his brother, John, who had inherited it, and he continued always to be active in it and in his studies. The University of Pennsylvania in 1782 offered him the chair of botany, but he refused it because of ill health. The American Philosophical Society elected him a member in 1786. In 1812 the Philadelphia Academy of Natural Sciences elected him to membership. On July 22, 1823, "death came suddenly and kindly to the aged botanist, from a ruptured bloodvessel in the lungs; he had just finished writing the description of a plant, and was stepping out for a stroll in his beloved Garden."

The influence of John Bartram on his son William was not only of a general nature, as noted, but also of a very specific character. John's Description of East-Florida might be considered a first draft of parts of William's Travels. And both books were the sources of many later literary uses. In both are the same floating islands of Pistia, water lettuce or water grass, which Chateaubriand used in Atala, the magnolias which Wordsworth put in Ruth, and the spouting fountains from which flowed the "sacred river" Alph of Coleridge's Kubla Khan. The literary history of these fountains is a strange one, and has fascinated many writers. Here is one of the most interesting fountains, as John Bartram recorded it on January 4, 1766:

. . . coasting the east-side, we soon came to a creek, up which we rowed a mile, in 4 and 6 foot water and 30 yards broad, of the colour of the sea, smelled like bilge water, tasting sweetish and loathsome, warm and very clear, but a whitish matter adhered to the fallen trees near the bottom; the spring-head is about 30 yards broad, and boils up from the bottom like a pot; plummed it, and found about five fathom water; multitudes of fish resort to its head, as very

large garr, cats, and several other sorts; the alligators very numerous either on the shore or swimming on the surface of the water, and some on the bottom, so tame, or rather bold, as to allow us to row very near to them. What a surprizing fountain must it be, to furnish such a stream, and what a great space of ground must be taken up in the pine-lands, ponds, savannahs, and swamps, to support and maintain so constant a fountain, continually boiling right up from under the deep rocks, which undoubtedly continue under most part of the country at uncertain depths?

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On January 15, at another place, John Bartram found a flow of water

of the heads boil up like a pot in a pure white sand, every minute it boils up above the surface of the common pond or bason, then the surrounding sand slips into the cavity, which presses down the spring until the water below is collected from the back under-ground stream so strong as to force the sand and water above the common surface, so that there is a continual periodic motion

When William Bartram traveled through this same territory either he had his father's *Journal* with him or he knew it by heart. In describing a similar spring, he used almost the same language:

. . . in front, just under my feet was the inchanting and amazing chrystal fountain, which incessantly threw up, from dark, rocky caverns below, tons of water every minute, forming a bason, capacious enough for large shallops to ride in, and a creek of four or five feet depth of water, and near twenty yards over, which meanders six miles through green meadows, pouring its limpid waters into the great Lake George, where they seem to remain pure and unmixed. About twenty yards from the upper edge of the bason, and directly opposite to the mouth or outlet to the creek, is a continual and amazing ebullition, where the waters are thrown up in such abundance and amazing force, as to jet and swell up two or three feet above the common surface: white sand and small particles of shells are thrown up with the waters, near to the top, when they diverge from the center, subside with the expanding flood, and gently sink again [Travels, p. 165This fountain, along with many others described by William Bartram in his Travels, was, as shown by John Livingston Lowes in his The Road to Xanadu, the source of an even more famous description. Before he envisioned Kubla Khan, Samuel Taylor Coleridge had been reading William Bartram's book; it is not strange then that his language, as in the following, should bring Bartram to mind:

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And from this chasm, with ceaseless turmoil seething,

As if this earth in fast thick pants were breathing,

A mighty fountain momently was forced:
Amid whose swift half-intermitted burst
Huge fragments vaulted like rebounding hail,
Or chaffy grain beneath the thresher's flail:
And 'mid these dancing rocks at once and ever
It flung up momently the sacred river.
Five miles meandering with a mazy motion
Through wood and dale the sacred river ran
Then reached the caverns measureless to man,
And sank in tumult to a lifeless ocean.

In back of Coleridge's fountain is William Bartram's and in back of William's is John's. Lowes says of William that "Bartram was inordinately fond of letting himself go on the subject of ebullient fountains" (The Road to Xanadu, 2d ed., London, 1951, p. 368-369), but that fact is due, in part, to a similar fondness of John Bartram's. On March 12, 1827, long after he had first read the Travels, Coleridge remarked (as reported in his Table Talk) that "the latest book of travels I know, written in the spirit of the old travellers, is Bartram's account of his tour in the Floridas." Much of that "spirit of the travellers" in William Bartram's writing was due to his father.

This influence on the life and character of the son by the father must be seen, however, in terms of an even larger influence; that is, the entire eighteenth-century movement of sentiment de la nature. The books by both the Bartrams are themselves not only sources of European eighteenth- and

nineteenth-century interest in "nature" but are themselves part of that great Romantic literature, imbued with many references and allusions to the life of the "noble savage." Both John and William were active members of a worldwide intellectual movement. Liberal and humanitarian thinking about nature, man, and God and a Rousseauistic independence were characteristic of both men as well as of the philosophical temper of the century.

In an age of strong scientific curiosity and romantic interest in the far-off and the exotic, it was natural that William Bartram's book should make a deep impression and become an important influence on literature. Nature, landscape, travel, Indians—all the elements of popular interest—are in Bartram. His *Travels* appeared in two editions in England (1792, 1794), one in Ireland (1793), one in Germany (1793), one in Holland (1797), and one in France (1799); there may also have been a Swedish edition.

Reference has already been made to Bartram and Coleridge's Kubla Khan. In his classic work on Coleridge, subtitled A Study in the Ways of the Imagination, Professor Lowes summarizes in this way (p. 46-47) the impression which William Bartram made upon the poet:

Probably none of the books which Coleridge was reading during the gestation of "The Ancient Mariner" left more lively images in his memory than Bartram's Travels. The fascinating fifth chapter of Part Two in particular had awakened him to all manner of poetic possibilities, and prompted copious transcriptions in the Note Book. And these transcripts form, as it happens, a significant cluster. The alligators . . . were set down from pages 127-30 of the Travels; the "little peacable community" of snake-birds, from pages 132-33; the antiphonal roarings of the crocodiles and the thunder, from page 140; the wilderness plot, green, fountainous, and unviolated, from page 157; and the Gordonia lasianthus, from pages 161-62. Coleridge's memory, it is clear, had been greedily absorbing impressions. . . .

Kubla Khan and the Ancient Mariner are not alone among the works of Coleridge that were indebted to William Bartram for their imagery, color, and sound. Osorio is suggestive of Bartram in many passages, as is Christabel. The poem Lewti was inspired by Bartram's rhapsodic night-piece on the Altamaha (Travels, p. 51), a river in Georgia. Professor Lowes comes to the conclusion that "No one who reads the three or four consecutive pages in Bartram can well doubt that they inspired . . . 'Lewti'" (The Road to Xanadu, p. 514).

On page 9 of Professor Lowes' study is a description of Coleridge's Note Book in which appears the entry: "Describe the never-bloomless Furze and then transi [sic] to the Gordonia Lasianthus." The rest is a long transcript of Bartram's description of that "tall aspiring" tree from pp. 161–62 of the *Travels*. The alligators, the snakes, the vultures, and certainly the bison, all come out of William Bartram's *Travels*.

William Wordsworth, especially in his poem Ruth, is saturated with Bartram. Not only are the images and language of Ruth to a large extent derived from Bartram but many of its philosophical implications regarding nature as well. Concerning Wordsworth's lines

Before me shone a glorious world— Fresh as a banner bright, unfurled To music suddenly

Professor Lowes says that the speaker, along with the poet himself, is thinking of Bartram's country and that "Nobody ever put the romance of discovering more magnificently into words than Wordsworth, in a poem shot through with reminiscences of William Bartram's glowing delineations of strange beauty" (The Road to Xanadu, p. 314).

The "floating islands" of *Pistia*, or water grass, described not only by William Bartram in pp. 88–89 and p. 426 of the *Travels*

but by his father before him, made a profound impression on Wordsworth. The image of this lusus naturae appears in many of the poet's works, in The Guide to the Lakes, in The Excursion, and in The Prelude. This Pistia stratiotes of Bartram's which "associates in large communities, or floating islands" (Travels, p. 88) was also important to Dorothy Wordsworth, who wrote a poem called Floating Island.

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Not only Coleridge and the Wordsworths, but most of the Romantic poets of the late eighteenth and early nineteenth centuries were influenced by William Bartram's Travels. Robert Southey knew Bartram's book very well and in Madoc drew heavily on him for his "savage lore." William Lisle Bowles and Thomas Campbell went to the Travels for their information about America. The poems of Felicia Hemans which deal with America are based directly on her reading; her debt to Bartram, as that of Thomas Campbell, was more indirect, however, the descriptions and flavor having come through the works of Chateaubriand. Literary historians have found direct or indirect traces of William Bartram's imagery and diction in the works of Charles Lamb, Percy Bysshe Shelley, Samuel Rogers, Thomas Moore, Alfred Tennyson, and Thomas Carlyle. Carlyle, writing to Emerson, said:

Do you know Bartram's Travels? . . . treats of Florida chiefly, has a wondrous kind of floundering eloquence in it; and has also grown immeasurably old. All American libraries ought to provide themselves with that kind of book; and keep them as a kind of future biblical article.

Emerson, Thoreau, and Thomas Holley Chivers were American writers who read and were influenced by William Bartram. And, in more recent times, the imagination of another American writer was stimulated by Bartram's description of a Florida fountain. Lafcadio Hearn, in his Leaves from a Diary of an Impressionist (Boston, New York, 1911) sketches just

such a fountain and his imagery reads, in Professor Lowes' words, like "sublimated Bartram." (The Road to Xanadu, p. 587.)

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ats of inderimeaso pro-; and rticle. Iolley read tram. ginastim-Florionist The influence of William Bartram on the literature of France and Germany was also considerable, as is indicated by the translation of the *Travels* into the languages of those countries. The most important Continental writer strongly influenced by Bartram was Chateaubriand; this influence has been definitely estab-

lished in a series of studies by French and American scholars, notably Gilbert Chinard in his L'Exotisme américain dans l'oeuvre de Chateaubriand (Paris, 1918). Professor Chinard shows in this study, that most of Chateaubriand's scenery, imagery, Indian lore, and very language in his Travels in America, Atala, and Les Natchez were taken directly from Bartram.

J. M. EDELSTEIN
Rare Book Division

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Annual Reports on Acquisitions

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Orientalia

His article concerns publications in the field of Orientalia received during 1957. For the most part material published in the United States is excluded. An attempt is made to appraise the year's accessions, and to describe items of particular value to research and reference work. The following members of the Orientalia Division compiled the separate reports:

China and Korea: Edwin G. Beal, with the assistance of K. T. Wu and Key P. Yang

Japan: Osamu Shimizu, with the assistance of Andrew Y. Kuroda

Hebraica: Myron M. Weinstein

Near East: Robert F. Ogden, with the assistance of Zuhair E. Jwaideh

South Asia and Southeast Asia: Horace I. Poleman, with the assistance of Cecil Hobbs and Walter H. Maurer

China

In the reports of acquisitions of other years mention has several times been made of a type of Chinese literature known as fang-chih, usually translated as "local history." Several libraries, including the Library of Congress, have in the past published catalogs recording their holdings of these works. A union list of local histories in mainland China was published in 1935 and a union list of those in Japan began to appear in sections in 1950. As a result of the appearance during the year of two additional union lists of fang-chih, the location of these works in libraries throughout the world is now quite well

established—better identified, in fact, than the location of any other class of Chinese literature.

Of the two new union lists received, one deals with the collections of Europe and the other with those of Formosa. Catalogue des monographies locales chinoises dans les bibliothèques d'Europe, compiled by Y. Hervouet (Paris, 1957), records 2,590 titles (or, with the elimination of works which appear in more than one place, 1,434 separate works) in 25 collections in Western Europe. As one might expect, the greatest concentrations are in Paris and London (together with Oxford and Cambridge), but the collections of Rome, Leyden, Stockholm, Louvain, Vienna, Copenhagen, Berlin, Munich, Marburg, and Hamburg are represented as well. As in the catalog published by this Library, the titles are recorded under the several provinces, and there is an alphabetical index of places. One might have expected Mr. Hervouet to use the French romanization of Chinese, but he explains: "J'ai adopté la transcription de Wade dans un but purement pratique: déjà employée dans le catalogue de Washington, elle l'est également par la majorité des sinologues européens à qui ce catalogue pourra être utile."

The second union list of Chinese local histories received was compiled by the National Central Library in Taipei. This work, entitled Tai-wan kung-tsang fang-chih lien-ho mu-lu, lists over 5,000 items, to be found in 11 public collections in Formosa. These include the National Central Library, the Palace Museum, the

National Central Museum, the Institute of History and Philology of the Academia Sinica, the National Taiwan University, the Taiwan Prefectural Library, and several Government departments. The earliest work listed bears a date corresponding to 1134; the latest was published in 1954. As a result of the publication of this series of catalogs, it is now possible for a student of Chinese history or geography to learn the location of almost any local history of interest to him.

The Library has received some notable Chinese publications in the fields of history and archaeology. The Erh-shih-wu Shih Pien-k'an-kuan (Office for the Publication of the Twenty-five Dynastic Histories) in Formosa has undertaken an ambitious project, akin to the publication of the Po-na-pên êrh-shih-ssǔ shih by the Commercial Press more than 20 years ago. To date, 10 of the newly reproduced histories have been received.

Like its celebrated prototype, which has been unavailable for purchase for a number of years, the new series consists of photolithographic reproductions of old editions of the histories. Although most of the editions are the same as those included in the *Po-na* publication, in some cases—such as in the choice of a text from which to reproduce the *Shih-chi*—improvements over the older collection have been made.

Still another new facsimile edition of the dynastic histories is being issued in Taiwan by the I-wên Yin-shu-kuan. Whereas the edition described above is issued in the traditional format, that of the I-wên Yin-shu-kuan is in Western style. Each page contains two leaves of the original in reduced size. Four titles of this series have thus far been received. Since the editions reproduced herein differ from those used in the series described above, the two sets will complement one another effectively and will be of great value to students of Chinese history.

In addition to the dynastic histories, the I-wên Yin-shu-kuan has reproduced a number of other classical texts. These are in the same format as the histories, with two leaves of the original reproduced on each page. Among the titles so far received three are worthy of special mention. The Shih-san ching chu-su (The Thirteen Classics, with Commentaries) is reproduced from a Kiangsi, 1815, edition, which itself was a facsimile reproduction of a Sung edition. The Wên-hsüan, a famous anthology of prose and poetry, compiled by Hsiao T'ung (501-531), is reproduced from an 1809 edition, which in turn is a reproduction of a twelfthcentury edition. The Tzŭ-chih t'ungchien, a chronicle of historical events from 403 B. C. to 959 A. D., by Ssu-MA Kuang (1019-86), is reproduced from a Yüan edition issued by Hu San-hsing (1230-87).

The Chung-kuo Shih-hsüeh Hui (Chinese Historical Society) in recent years has published collections of source materials on certain historical events of importance, in a series entitled Chung-kuo chin-tai-shih tzŭ-liao ts'ung-k'an. Eight of these collections form the subject of an extensive review article in the Journal of Asian Studies, vol. 18, no. 1 (November 1957).

The latest compilation received in this series is the *Hsin-hai ko-ming* (The Revolution of the Year *Hsin-hai*)—*hsin-hai* being the cyclical designation corresponding to the year 1911. This work, published in eight volumes in Shanghai in 1957, consists of essays, correspondence, diaries, memorials, proclamations, archives, and clippings from newspapers and magazines. In each volume the text is preceded by plates of historical interest. The last volume contains an annotated bibliography of 133 items.

A collection of source materials on the development of Chinese industries appeared early in 1957, published by the Chinese Academy of Sciences in Peiping.

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Under the title Chung-kuo chin-tai kungyeh-shih tzu-liao, two series have been issued. The first, in two volumes, covers the years 1840 to 1895, and was compiled by Sun Yü-t'ang. It deals with industries conducted with foreign capital; industries sponsored by the Imperial Government for military purposes; mining and textile industries; industries operated with private capital; and labor and laboring conditions. There is a useful bibliography of original materials in archives, manuscripts, periodical articles, and books. Some materials in the English language are also included. The second series, also in two volumes, covers the years 1895 to 1914 and was compiled by WANG Ching-yü. It deals with foreign investments and with governmentsponsored and private industries.

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A chronology in tabular form of earthquakes in China, entitled Chung-kuo tichên tzŭ-liao nien-piao, has been compiled by the Historical Section of the Committee for the Study of Earthquakes of the Chinese Academy of Sciences. This compilation, in two volumes, appeared late in 1956.

For each earthquake it gives the Western and corresponding Chinese date, the location, the general nature of the calamity, and the source of the information, sometimes with quotations. The information is based on general works, such as dynastic histories and veritable records of the various periods, but the most important single source is the local histories of the different areas. Information on earthquakes in modern times is gleaned from newspapers, magazines, and special reports.

The greatest difficulty in the compilation of this work was the evaluation of materials, since historians have sometimes not been very accurate or consistent in recording these events. For example, the Sungshih recorded the earthquake in Peking in 1057 as having occurred in the third month, whereas the Liao-shih gives the seventh month for the occurrence. The

editors, after much research, decided that the earlier date is the more probably correct. For some earthquakes the locality is not clearly indicated. There are also cases of inaccurate, incomplete, or exaggerated accounts. All of these discrepancies and inaccuracies had to be studied and evaluated. During the two years of compilation, over 8,000 titles were consulted; these included over 2,300 histories and literary works and more than 5,600 local histories.

Epitaphs are an important form of Chinese literature; they supplement historical materials, and since the Sung dynasty many compilations have been made. The Archaeological Research Institute (K'ao-ku Yen-chiu-so) of the Chinese Academy of Sciences published in 1956 the Han Wei Nan-pei-ch'ao mu-chih chishih (Epitaphs of the Han, Wei, and Northern and Southern Dynasties and Commentaries on Them), containing 609 inscriptions on stone tablets and tombstones.

Edited by Chao Wan-li, this work is in six volumes. The first two contain a list of the epitaphs from the Han to the Sui dynasties in chronological order, followed by a useful bibliography. For each epitaph the date is given, with a brief history, including such items as size, number of characters, where discovered, type of calligraphy, and a short sketch of the subject. If there are references to the epitaph they are quoted in part or in full. Volumes III-VI contain reproductions of rubbings of inscriptions from the stone tablets. This publication is of interest not only to students of Chinese history but also to students of Chinese calligraphy.

The first of two volumes of a bibliography of articles on Chinese history appeared in 1957 under the title Chung-kuo shih-hsüeh lun-wên so-yin. It was compiled jointly by the Chinese Academy of Sciences, the First and Second Branches of

the Historical Research Institute, and the Department of History of Peking University. It contains upwards of 30,000 titles published in more than 1,300 serials during the last 50 years. The articles are arranged under four main headings: History, biography, archaeology, and bibliographies. For each article it gives the title, author, name of periodical in which it appeared, issue number, and date.

Articles on the history of the various disciplines, to appear in the second volume, will be listed under the following: History, philosophy, sociology, political science, economics, culture and education, religion, philology, literature, art, historical geography and geography, natural science, agriculture, medicine, engineering, and technology. The second volume will also contain indexes of subjects, personal names, and places.

In 1948 the Institute of History and Philology of the Academia Sinica began to publish the second item in its series entitled Chung-kuo k'ao-ku pao-kao chi (Archaeologia Sinica). The first item in the series, which was published in 1934, is entitled Ch'êng-tzŭ-yai. A translation of this study, by Kenneth Starr, was published by Yale University Press in 1956 under the title Ch'êng-tzŭ-yai: The Black Pottery Culture Site at Lung-shan-chên in Li-ch'êng-hsien, Shantung Province. The second item in this series is appearing in several sections and subsections. It is entitled Hsiao-t'un, the name of the village which is believed to have been the location of the palace in the ancient district of An-yang, where the Yin relics, dating from the second millennium B.C., were discovered.

This second publication is divided into three major parts. The first of these $(ti-i-p\hat{e}n)$, which is to contain a general summary discussion, has not yet been published. The second part $(ti-\hat{e}rh-p\hat{e}n)$, subtitled $Yin-hs\ddot{u}$ $w\hat{e}n-tz\breve{u}$ (Inscriptions) is a massive compilation, in ten volumes pub-

lished from 1948 to 1953, of rubbings of inscriptions on oracle bones and shells excavated from 1928 to 1937. These volumes contain a total of 1,549 plates, reproducing 13,047 inscriptions.

The third part of this series (ti-san-pên) is subtitled Yin-hsü ch'i-wu (Artifacts). It also is appearing in several parts. Part one (chia-pien) is on the pottery of the Yin and pre-Yin periods. The first fascicle of this part, published in Formosa in 1956, is a classified and descriptive account, with a corpus of all the main types of pottery and their designs. The second fascicle, which is to be published soon, is to deal with the underground distribution of the different pottery types and their evolution.

The study of the Yin relics is also continuing in mainland China. An extensive discussion of the inscriptions on oracle bones and tortoise shells was published by the Chinese Academy of Sciences in 1956. This work by Ch'EN Mêng-chia, entitled Yin-hsü pu-tz'ŭ tsung-shu, deals with, among other subjects, the language of the Shang period and its grammar, the calendar and chronology, the lineage of the rulers, temple names, agriculture, and religion. The appendix contains a brief history of the various collections of relics and a classified bibliography of books and articles on them. There also are useful maps and plates.

The Office for the Administration of Cultural Objects, in Peiping, published in 1956 an archaeological work of unusual interest. It is the *I-nan ku hua hsiang shih-mu fa-chüeh pao-kao*, a report on the excavation of an ancient mausoleum with elaborate carvings on stone. This tomb, located at I-nan in the central southern part of the province of Shantung, first came to the attention of a schoolteacher there in 1953. Thereupon the government dispatched archaeological teams to excavate the site. The book contains 105

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plates; some show the surroundings of the mausoleum and its stone carvings, but most of them are reproductions of rubbings of inscriptions found in the tomb.

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It has been determined that the tomb was constructed toward the end of the second century A. D. It proves that the architecture of the Han dynasty had reached a high level of development, and that the sculptural art had been influenced to a large extent by Buddhism. The carvings present a pictorial biography of the deceased and the appurtenances to which he was accustomed. Students of Chinese history, of art, and of the sociology of the Han dynasty will find this publication very interesting.

Hui-hsien in northern Honan was an important center in ancient China, and in recent years many interesting objects have been unearthed there. Between 1950 and 1952 the Archaeological Research Institute of the Chinese Academy of Sciences sent out a number of expeditions which discovered old tombs, together with burial objects of the Shang period, the Warring States period, and the Han Dynasty. The results of the excavations are embodied in the Hui-hsien fa-chüeh pao-kao, edited by the Institute and brought out by the Chinese Academy of Sciences in 1956. Arranged in six sections according to the areas excavated, the report first gives a brief history of the expedition and then describes the various objects unearthed. These include stone implements, pottery, bone objects, oracle shells and bones of the Yin dynasty, and bronzes. Burial objects include bronze and pottery vessels and ornaments of all kinds, and some skeletons have also been found. The text is followed by 122 plates of photographs showing the sites explored, the objects discovered, and some designs on the vessels. There are several maps.

A lexicographical work of considerable importance was also received. The Shuo-

wên chieh-tzŭ liu-shu su-chêng (A Commentary on the Six Kinds of Characters [i. e., character-formation] in the Shuo-wên chieh-tzŭ), compiled by Ma Hsü-lin, was published in Peiping by the Chinese Academy of Sciences in 1957. According to the compiler's preface, dated 1955, this work, which consists of 30 chüan in 15 volumes, was begun in 1911 and was substantially completed in 1928, though it has been under constant revision since that date. Even though it is now in print, the compiler does not consider that it has reached a definitive form.

The Shuo-wên chieh-tzu, which is the first substantial work of lexicography in Chinese history, was completed in the year 100 A. D. by Hsü Shên. For each character he gave an explanation of the structure, and illustrated its meaning by excerpts collected from various sources. Many studies of this work have been made over the centuries. In the Ch'ing period, for example, Tuan Yü-ts'ai made an extensive investigation of works relating to it and in 1808 published his annotations under the title Shuo-wên chieh-tzŭ chu (15 plus 2 chüan). The most comprehensive study ever made of the work, however, is that of Ting Fu-pao, published in 1930-32 under the title Shuo-wên chieh-tzŭ kulin (66 volumes plus a 16-volume supple-

The present work is the latest attempt to bring together the comments of many students of etymology—contemporary as well as those of the past—under individual characters. The discussion is often supplemented by a statement of the views of MA himself. Although not so exhaustive and comprehensive as the Ting compilation, the newer work is more selective and up-to-date. It has made good use of modern works on oracle shells and bones. It therefore complements nicely the earlier work of Ting. Owing to the difficulty of obtaining a font of type which would con-

tain the needed archaic and obscure characters, the text is handwritten and reproduced by photo-offset. The text of the first seven *chüan* is from the hand of a friend of the compiler, Ch'ên Pang-huai, who is a noted scholar and calligrapher in his own right; the remainder is from the hand of the compiler himself.

This section should not end without mentioning a few reference works. One which is likely to receive wide use is Gendai Chūgoku jimmei jiten (Biographical Dictionary of Contemporary Chinese), published in 1957 by the Konan Shoin in Tokyo. This contains biographical sketches of some 7,000 persons and was compiled under the supervision of the Asian Affairs Bureau of the Ministry of Foreign Affairs (Gaimushō Ajiya Kyoku) by the Kasumigaseki-kai, a group understood to be composed largely of employees, both active and retired, of the Ministry. The accounts in the work vary considerably in length. Many of them carry information for 1955 and 1956, and a few even report activities of early 1957. Dates of birth are given in many cases. The names are arranged in the order of their Japanese pronunciation, but since an alphabetical index to all names romanized by the Wade-Giles system is included, the contents of the volume will be easily accessible to all students of Chinese. Insofar as Chinese names are concerned, this much larger volume supersedes the Gendai Chūgoku Chosen jimmei-kan (Biographical Dictionary of Contemporary Chinese and Koreans), which the Ministry of Foreign Affairs published in 1953. For Korean personages, however, the earlier publication remains very useful.

A handbook of institutions of higher education in Free China has been published under the title Tzu-yu Chung-kuo ta-chuan hsüeh-hsiao kai-lan. This work, which was compiled and published by the Hai-wai Ch'u-pan-shê in Formosa in 1956, includes information on three national uni-

versities and colleges, eight provincial institutions, and five private institutions. For each it gives a brief history, its organization, courses, and regulations, and other pertinent information. An appendix contains regulations in effect in 1955 for the recruitment of candidates and for the entrance examinations of five of the institutions.

A compendium of plants in Canton, in the province of Kwangtung in South China, appeared in 1956 under the title Kuang-chou chih-wu chih. It was compiled by the South China Plant Research Institute (Hua-nan Chih-wu Yen-chiu-so) of the Chinese Academy of Sciences. The plants are given by classes with detailed descriptions. There are 415 illustrations, as well as indexes of Chinese and Latin names.

Korea

During the past year the Library has for the first time received Korean serial publications on a regular and continuing basis. Five newspapers are being received regularly, all in monthly cumulations rather than as individual issues. As a result, they are available for use immediately upon arrival, and do not need to undergo the usual sorting and collating procedures. These are the Korea Times and the Korean Republic, both in English; and the Hanguk ilbo, the Tonga ilbo, and the Choson ilbo in Korean.

Some 15 commercially published magazines are also being received regularly for the first time. Among these may be mentioned Chejŏng (Finance); Pŏpchŏng (Law and Administration); Nongmin saenghwal (Farmer's Life); Hyondae munhak (Modern Literature); Sasang-gye (The World of Thought); and Yŏwŏn (Women's Magazine).

The learned journals, such as Tong Bang Hak Chi (Journal of Far Eastern Studies, Chosun Christian University) and Universitas Seoulensis, Collectio Theseon, have

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continued to arrive through the channels of international exchange. Some of these have been mentioned in previous reports. Of a related nature are two Festschriften, both of which were published by the firm of Ilcho-gak in Seoul. One of these, entitled Yi Pyong-do paksa hwagap kinyom nonch'ong, consists of 24 essays written in honor of the sixtieth birthday of Y1 Pyongdo, who is one of the most eminent of living Korean historians and is a professor at Seoul National University. The other, entitled Ilsok Yi Hi-sung sonsaeng songsu kinyom nonch'ong, is a collection of 30 articles—all by outstanding Korean scholars-published in commemoration of the sixtieth birthday of Y1 Hi-sung, one of the best-known of Korean philologists. As one might expect, most of the articles in the latter volume deal with linguistic matters.

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The past year also witnessed the completion of the unabridged dictionary, entitled K'un sajon, which has been mentioned in previous years. Compiled under the auspices of the Hangul Hakhoe (Korean Language Research Society, formerly named Choson-o Hakhoe), this is by far the most comprehensive dictionary of Korean ever undertaken; it has been a major project of over 70 of the country's ablest scholars since its inception in 1927. Three volumes had been published before the outbreak of the Korean conflict in June 1950. Further publication was delayed until 1957, when it was completed with financial assistance from the Rockefeller Foundation. The complete work fills six volumes.

Since the study of Korean history and civilization is, in the institutions of the Occident, a younger field than the study of China and Japan, library collections of Korean books are relatively undeveloped. For this reason the interchange of information regarding holdings is especially important. It is pleasant to report that

significant progress along this line is being made.

One of the largest collections of old Korean books in the Western world is located in the East Asiatic Library of the University of California. This group of materials, which was assembled by Asami Rintarō (1868–?), formerly a professor of history in Keijō Imperial University, was purchased several years ago by the University of California. A catalog of this collection is now being prepared for publication by Fang Chao-ying and P. W. Sohn.

One of the largest collections of old Korean books in the Eastern Hemisphere is held by the National Library in Seoul. During the past year a classified catalog of this collection was received. Issued under the title Kosŏ-bu pullyu mongnok, 'Chosŏn-mun (Classified Catalog of the Old Book Section—Works on Korea), it records holdings as of August 1955. Included in it are 11,987 titles in 49,638 volumes. The term "Old Book Section" as here used refers to works which were published in the traditional Chinese format and were laid flat on the shelves.

The receipt of North Korean materials has continued to be irregular. Some newspapers and magazines have come in, but the issues do not constitute full series. An interesting item received in the past year is the telephone directory of the North Korean Government, as of January 1956. This 78-page document, entitled *Chŏnhwa ponho-bu*, was published by the Central Telephone Bureau in Pyongyang; from it one can draw certain information regarding the organization of the government of North Korea.

Japan

The volume of publishing in Japan increased in 1956 despite apprehensive forecasts. Total figures for 1954 have already

been reported in this journal.¹ In 1955 monographic titles rose to 21,653, of which 13,042 were new. In 1956 they rose further, to 24,541 and 14,983, respectively, but these figures represent the increased activity of publishing firms with large capital rather than a general increase by all publishers. Total figures for 1957 were not yet in at the time of writing this report, but the indications were that there would be little if any decrease.

Some of the "better books" (for popular reading) selected by a committee of critics from the Shuppan nyūsu (Publishing News) were Japanese translations of works by Edgar Snow, Edward Hallet Carr, André Siegfried, Van Wyck Mason, J. Robert Oppenheimer, and Jean Cassou, indicating the type of foreign material in which the Japanese reading public was currently interested. Space does not permit a detailed survey of the monographs on Japanese and related subjects by Japanese authors which appear on this list, nor does this list include important scholarly works, reference tools, or works in progress in the form of collections, collected works, or series. But a survey of the acquisitions in Japanese during the past year indicates that slightly more than 53 percent of the titles on the Shuppan Nyūsu list alone have been received.

The total number of copies of all non-academic periodicals issued in Japan during 1956 is estimated at 370 million, compared to the previous year's figure of 292,300,000. The number of popular periodical titles alone totaled 1,441, an increase of 70 over the previous year. During 1956 more than 100 new serials began publication.

A major contribution to the study of the early history of Japan is Engi Shiki no Kenkyū (Study of the Engi Detailed Pro-

cedure for Enforcement of the Codes), by Mryagi Eishō (2 vols., Tokyo, 1955, 1957). No systematic body of law was produced in early Japan because the clan heads exercised full administrative and judicial control over their own clans, although there are scattered references to such a system in the Kojiki (712 A. D.) and Nihon shoki (720). It was not until after the development of regular intercourse with China, and the subsequent Taika Reform Edict of 646 in Japan, an instrument which helped to break down the clans' autonomy, that compilation of laws was begun in earnest.

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By this time China had had a system of law for almost a thousand years; the first mention occurs in the bibliographical section of the dynastic history of the Han (Han-shu I-wen-chih), namely, the Faching (Canon of Law), compiled by the agriculturist Li Li some time during the fourth and third centuries B. C. The first models the Japanese used were chiefly those of the Sui (581-618) and T'ang (618-906) dynasties, by which time China had reached a peak in her legislative career. The Japanese also followed these two systems of dividing law into four classes: lü (Japanese ritsu), a penal code corresponding roughly to prohibitions; $ling(ry\bar{o})$, or injunctions, a civil administrative code; ko (kyaku), institutes; and shih (shiki), forms. The last two were miscellaneous bodies of regulations for the enforcement of the codes in points of detail, the ko to supplement the penal codes and the shih constituting a detailed procedure for the enforcement of the administrative code.

The tendency was for the kyaku and shiki to reinforce the administrative code in order to meet Japanese requirements. Consequently they deal largely with forms and procedures, the former with administrative and executive procedure and the latter with forms, ceremonies, and even ritual.

¹ QJCA, XIII (February, 1956) 113.

The first recorded Japanese legislation on these Chinese models seems to have been a body of administrative codes in 22 chapters, promulgated by Emperor Tenchi in 662. These are not extant, though frequently referred to in early historical sources. Under Emperor Temmu (672-86) the administrative codes were revised and new penal regulations compiled. These revised codes were distributed to government offices in 689. In 701 a new set of administrative codes was compiled in 11 chapters, and a penal code in 6, called the Taihō Ritsuryō, after the era in which they were compiled. But these also no longer exist, except in an official commentary dated 833, the Ryō no Gige, and in a similar but larger private work, the Ryō no Shūge of 920. The Taihō codes were revised in 718, and the new code, known as the Yōrō code, again after the name of the era, was not enforced until 757. It is this revised Taihō Ritsuryō which is extant today, and which is usually, but not quite correctly, referred to as the Taihō code.

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The penal codes ($l\ddot{u}$) of T'ang China were adopted without much change in Japan, and therefore the need for special Japanese commentaries was small. There were, however, annotations of Japanese ritsu of both Taihō and Yōrō. The ritsu have not been so well preserved as the $ry\bar{o}$, but fairly full fragments are extant.

The kyaku have been transmitted in the Ruijū Sandai Kyaku (The Kyaku of Three Eras, Classified), a collection for the three eras of: Kōnin Kyaku (Kōnin 10—819 A. D.) comprising the kyaku and shiki issued after the Taihō code of 701, only fragments of which remain, totaling 10 chapters; Jōgan Kyaku (Jōgan 10—868, A. D.), comprising the kyaku and shiki issued after 819, in 21 chapters, enforced from 871; and Engi Kyaku (Engi 7—907 A. D.), containing the kyaku and shiki issued to that date, in 12 chapters.

There were therefore collections of shiki in the eras of Kōnin, Jōgan, and Engi. But unlike the Engi Kyaku, the Engi Shiki contains the legislation of the two preceding periods, and consists of 50 chapters. In other words, while the Engi Kyaku did not supersede the separate shiki of Kōnin and Jōgan, the Engi Shiki superseded the separate shiki of Kōnin and Jōgan, since it was an amalgamation.

The Engi Shiki was issued in 967, after the Engi period had ended. It was much more voluminous than the kyaku, and there were interruptions in its compilation due to death of some of the compilers, but the work has been preserved with comparatively little loss.² It is with this work that the present study is concerned.

The history of studies of the Engi Shiki is a long one. As remarked above, the ceremonial and ritual parts of the Engi Shiki were important in a court and bureaucracy whose functions became increasingly formalistic in aspect and rigid in content as the Heian period (792–1192) wore on, and this work soon became not only a guide but also a primer on government administration. It was this aspect that for some time caused the Engi Shiki to be studied. The first study along this line which uses the Engi Shiki as one of its sources of information is the Honchō getsurei, by Koremune Kimikata (fl. 923-69). The very title "getsurei" (Chinese yüeh-ling) is significant in that it is identical with the portion of the Li-chi (Book of Rites). From the viewpoint of government organization and duties of its functionaries, the first study was the Seiji yöryaku (Summary of Administrative Affairs), by Kimikata's grandson, KOREMUNE

² For further details, see George B. Sansom, Japan; a Short Cultural History (New York, 1936), 156-57; and his "Early Japanese Law and Administration," in Transactions of the Asiatic Society of Japan, 2d ser., IX (December 1932), 67-70.

Sukeaki. This work was written in 130 chapters of which only 26 are extant.

During the Tokugawa period (1603–1868), the Engi Shiki attracted the attention of Tokugawa Ieyasu (1543–1616), founder of the dynasty, as part of his policy of rule by law and virtue.³ A scholar of this period who dealt with portions of the Engi Shiki was Kamo Mabuchi (1697–1769).

After the Meiji Restoration of 1868 a few scholars began the study of the Engi Shiki as a work in itself, and an increasing number of scholarly articles began to appear in academic journals. Attempts were also made to reconstruct the original text by comparing the different versions which had been transmitted through hand-copying, and to discover portions which had been lost in the process. The resultant combined and emended version contained in the twenty-sixth volume of the Shintei Zōho Kokushi Taikei (Tokyo, 1929–35) is now accepted as the standard version.

Prof. Miyagi Eishō of Yokohama National University devoted 20 years to his monumental work and has produced the first really comprehensive study of the original compilation. His first volume is devoted to an article-by-article textual study of the original as now contained in the Kokushi taikei series in an effort to find out when each article was originally codified, what was its purpose, and what were the later revisions. From this he has presented more detailed data concerning this basic source for the period during which the Engi Shiki was in force, roughly 927-67, not only for administration but also for all the various aspects of society: economic, sociological, religious, educational, cultural, etc. In the second volume the

author presents descriptive accounts and conclusions. Both volumes are separately indexed.

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Eiga Monogatari no Kenkyū (Study of the "Tale of Glory"), by MATSUMURA Hiroshi (Tokyo, 1956), is so named because it is a historical tale dealing with the life and times of Fujiwara no Michinaga (966-1028), who headed the Fujiwara clan at the height of its power in Japan. Its 40 chapters cover a period of almost two centuries encompassing the reigns of 15 emperors, from Uda (888-97) to Horikawa (1087-1107), and ending in the second lunar month of 1092; but it is more detailed for the years 947-1092. As history, this "tale" begins where the six official national chronicles (Rikkokushi) end, and depicts Regent and Prime Minister Michinaga, rather than the emperors, because Michinaga was the most powerful figure in the land, making and breaking emperors almost at will. The facts contained are generally correct, though some confusion concerning exact dates exists, and it is a historical source of importance. It also has an important place as literature, although it is not without a certain monotony of tone. It also is the first history of Japan written in a mixture of Japanese kana and Chinese characters, as contrasted with its predecessors which were written only in classical Chinese (kanbun). The author and exact date of writing have long been disputed, and it is usually considered the work of two individuals—chapters 1-30 by one hand, and 31-40 by another.

A partial study of this long-neglected work was done by MOTOORI Norinaga (1730–1801) in 1772–75, but most of the numerous studies and commentaries which have appeared since then belong to the post-Restoration period. The present study is another addition to the increasing fund of information on the original work, and concerns itself with a careful analysis

^a Honkō Kokushi Nikki (Diary of the Buddhist Priest Honkō Kokushi), k. 13, p. 768, under 24th day, 10th month, Keichō 19—1614, in Dai Nihon Bukkyō Zensho, vol. 139.

of various extant versions of the original, its genesis, its content, and its influence on later writings of a similar nature. Also included is a chronological table of facts dealing with the original work, 1109–1956, and a general index. The author of this study, Matsumura Hiroshi, has long been engaged in classical Japanese literature, and is at present assistant professor of Japanese literature at Nagoya University.

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Among the important reference works received is Naikaku Bunko kanseki bunrui mokuroku (Classified Catalog of the Chinese Works at the Cabinet Library), compiled by Naikaku Bunko (Tokyo, 1956). The contents are classified generally in the traditional ssu-k'u system, and list works by Chinese and some Korean authors, and Chinese works abstracted or otherwise amended, or given diacritical reading marks or marginal notes by Japanese, but exclude Japanese commentaries on Chinese works. The items are listed by title, giving the number of chüan, the author, the date when printed or handcopied, the name of the library or collection from which inherited,4 ts'e, and location in the library. There is an index to the first character in titles arranged by total number of strokes, and an index to titles as read in Japanese arranged in the order of the a,i,u,e,o kana syllabary.5 The present catalog supersedes the Naikaku Bunko kansho ruibetsu mokuroku (2 vols., 1890) and Naikaku Bunko tosho dainibu kanseki mokuroku (1914).

Of importance for the study of Dutch-Japanese relations and their cultural effect on Japan during the Tokugawa period (1603-1868) is Edo Bakufu kyūzō yōsho mokuroku (List of European Books Collected by the Edo Shogunate), compiled by the Rangaku Shiryō Kenkyūkai (1957). This is a catalog of 3,630 books, mostly in Dutch with a few in English or French, which were accidentally discovered at the Ueno Library, Tokyo, early in 1954. Most of these books had been in the custody of the Shogunate's Bansho Shirabesho, a school for Dutch studies established in 1855, and most are publications belonging to the early nineteenth century. The existence in Japan of a number of them had hitherto been unknown. Items are listed by author, giving title, edition, place and date of publication, pagination, size, and other bibliographical information. catalog provides a rich source for further study of Japan's relations with the only European country with which it had dealings during the Tokugawa period.

A sequel to a now relatively scarce compilation is Shimpan tembon shomoku (Catalog of Works in Chinese with Japanese Diacritical Reading Marks, Continued), compiled by ENDO Yoshimoto and Hirohama Fumio (1957). The original work, Tembon shomoku, compiled by the late Yoshizawa Yoshinori (1876-1954), appeared in the Iwanami Kōza Nihon Bungaku series (Tokyo, 1931), and contained 861 such works. The present sequel lists an additional 664 titles in the chronological order of their having been given diacritical marks (828-1386) and a supplement containing titles for which the treatment date has not yet been established. Titles are numbered in sequence with the original work.

In the field of religion a major contribution which is another sequel is Meiji, Taishō, Shōwa, Shintō shoseki mokuroku (Meiji gannen yori Shōwa jūgonen ni

⁴ The holdings of the Naikaku Bunko grew from a combination of the Momijiyama Bunko and the Shōheizaka Gakumonsho collections of the Tokugawa Shogunate. Eight private collections were absorbed by the latter during the course of its existence, and all were combined in 1884 to become the Dajōkan Bunko, which in the following year was renamed the Naikaku

^{*}Henceforth referred to as "in a,i,u,e,o order."

itaru) (A Bibliography of Shinto Literature from Meiji 1 [1868] to Showa 15 [1940]), compiled by KATO Genchi (Tokyo, 1953). This is a bibliography of works written either in Japanese or in kanbun, and is a sequel to the Shintō shoseki mokuroku (A Bibliography of Shintō), compiled by the same author (1938), which included works written from early times to 1868. The present work covers the years 1868-1940 and is divided into 10 classes, each subdivided further. Items are listed by title, giving reading in modified Hepburn romanization, author (or compiler), publisher (if any), date of publication or handcopying, and its library location. In the last sense this work is also a union catalog. There is also an author index, arranged in a,i,u,e,o order, and an alphabetically arranged title index.

An important addition to reference aids in the study of Japanese history is Nihon rekishi chizu (Atlas of Japanese History), compiled by the Zenkoku Kyōiku Tosho K. K. Henshübu under the supervision of NISHIOKA Toranosuke and HATTORI Shisō (1956). This was projected in 1953 as part of a three-volume work which will deal also with Oriental and Western history in separate volumes. Preparation of the present volume on Japan was begun in 1954, and it has engaged more than 40 scholars, 20 cartographers, and 10 scholarly institutions. The approach in the present work differs from that of its predecessor, the Dai Nihon dokushi chizu (Historical Atlas of Japan), by Yoshida Togo (1897), in that it contains considerably more explanatory text and places greater emphasis on geography, economics, government, and politics. In this respect it enlarges the approach of the Nihon kokushi chizu (Atlas of Japanese History), by HARA Hideshirō (1900). The present work contains 75 maps covering Japanese history from the archaeological Jomon period to 1954, with explanatory texts (unfortunately in print too fine for comfortable reading) on the verso of each map. There is an index of place names appearing in the Man'yōshū, arranged in a,i,u,e,o order followed by characters; a general index to place and personal names, arranged by the total number of strokes in the first character, preceded by a table of first characters similarly arranged, and followed by a short list of names in kana, the Japanese in hiragana and foreign in katakana, arranged in a,i,u,e,o order; and an index to foreign place names, arranged in a,i,u,e,o order by usual Japanese pronunciation. At the end of the volume are a list of archaeological sites, arranged by prefecture where located; and a list of nengo in characters, arranged in a,i,u,e,o order, giving reading and duration.

A handy reference work is Jimbun chiri jiten (Dictionary of Human Geography), compiled by Kudō Chōsu under the supervision of Mino Yokichi (1957). It was compiled for college and high-school use under the postwar revised educational system. Items are arranged in a,i,u,e,o order with headings in hiragana, followed by characters, the English equivalent if any, and the field of study to which the item belongs. There is a combined index.

In the field of natural science the Library also acquired the 1957 issue of Genshiryoku nenkan (Yearbook of Atomic Energy), compiled by Nihon Genshiryoku Sangyō Kaigi. This first issue of a projected annual publication contains a chronological table of events dealing with atomic energy, 1895–1956, and three sections for international, domestic, and related information, each section being subdivided further. There are separate indexes to persons' names and to topics, each arranged in a,i,u,e,o order.

A related work by the same compiler is Nichi-ei-futsu-ro genshiryoku yōgo jiten (Glossary on Atomic Energy in Japanese, English, French, and Russian), compiled

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by Nihon Genshiryoku Sangyō Kaigi under the supervision of Sugimoro Asao and others (1956). The basis of this work is the Provisional Glossary on Atomic Energy prepared for the International Conference on the Peaceful Uses of Atomic Energy, held at Geneva, August 8-24, 1955, and published as no. 115 of the Terminology Bulletin, with the Spanish section deleted and one for Japanese added. Items are listed in alphabetical order in English, followed by their equivalents in French, Russian, and Japanese. There are separate indexes for each of the last three languages. Related information is also contained in an appendix, on the fly-leaves, and on the end papers.

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Gendai temmongaku jiten (Dictionary of Contemporary Astronomy), by Araki Toshima and Araki Yūgō (1956) is divided into five parts, covering the bases of astronomy and practical astronomy; celestial mechanics; the solar system; the fixed stars; and extragalactic nebulae and contemporary cosmology. Each part is subdivided into chapters, which in turn are divided into a total of 900 topics. The index, arranged in a, i, u, e, o order by the usual Japanese reading of foreign names, makes use of the not inconvenient arrangement noted above. There also are five folded astronomical charts.

Chigaku kyōiku jiten (Dictionary of Studies Related to the Earth), compiled by Fujimoto Haruyoshi and Suzuki Keishin (1957) contains terms used in astronomy, geophysics, meteorology, oceanography, geology, mineralogy, and other subjects at the college and high-school level, compiled as a result of recent emphasis on these subjects in the natural science curricula in Japan. Headings are arranged in a, i, u, e, o order in katakana, giving characters and/or academic nomenclature as applicable. A considerable amount of related information is given in 55 appendixes, and there is a subject index. Although

compiled for the above-mentioned level, this work is useful for the research student and scholar specializing in other fields needing a quick reference, as well as to the general translator.

Of a more specialized nature is Idengaku Zasshi Somokuroku to Sakuin, dai 1-kan (1921)-dai 30-kan (1955) (Catalog and Index to the Japanese Journal of Genetics, vol. 1 (1921)-vol. 30 (1955)), compiled by Nihon Idengakkai Idengaku Zasshi Sōmokuroku Henshū Iinkai (1956). This is a complete index through 1955 to the contents of the oldest of the three Japanese journals specializing in genetics.6 It contains an introduction in English, an author index in romanization, arranged in alphabetical order, giving titles in European languages; an index to abstracts similarly arranged; an author index in Japanese, arranged in a, i, u, e, o order, giving titles in Japanese; an index to abstracts, similarly arranged; a list of materials upon which genetic studies have been based, in both European and Japanese nomenclature; Titles of lectures, arranged in a, i, u, e, o order of the lecturer's name; tables of contents of each issue, arranged chronologically; and an appendix, containing miscellaneous information.

Nihon shokubutsu shi (Flora of Japan), by Or Jisaburō (1953), contains much less illustrative material than Nihon shokubutsu zukan (Illustrated Flora of Japan), compiled by Makino Tomitarō (1925), or the Naigai shokubutsu genshoku daizukan (Color Illustrations of Japanese and Foreign Flora), by Murakoshi Michio (1940), to name only two similar works. The present work is arranged by academic classification, and also contains an index to European nomenclature, an index to Japanese nomenclature, and a list of per-

⁶ The others are Annual Report of the National Institute of Genetics (Japan), English Edition, issued since 1951, and Iden (Heredity), issued monthly since 1947.

sons after whom Japanese flora have been named.

Another addition to the group of onevolume specialized dictionaries is Dobutsu no jiten (Encyclopedia of Animals), compiled by TAKI Isao and others under the supervision of Okada Yo (1956). The advantage of this dictionary for general use is the arrangement of items in a, i, u, e, o order in katakana, followed by characters and explanatory text, rather than the more usual arrangement by academic classification. The contributor's name is given at the end of each article. The appendixes contain useful related information, and the general index is arranged in a, i, u, e, o order in katakana, giving academic nomenclature, characters, and page-number.

Another welcome research and reference tool has been acquired in the form of a combined index to articles and research reports published by the Nihon Kenchikugakkai (Architectural Institute of Japan) in all three of its series: Kenchiku zasshi (Journal of the Architectural Institute of Japan), published since 1887; the Nihon kenchikugakkai rombunshū (Transactions of the Architectural Institute of Japan), issued since 1936; and the Nihon kenchikugakkai kenkyū hōkoku (Memoirs of the Architectural Institute of Japan), founded in 1946. Entitled Kenchiku zasshi. Rom-Kenkyū hōkoku sōmokuroku bunshū. (showa 11-30-nen), it was published in 1957 and commemorates the Institute's seventieth anniversary, forming a sequel to the 50-year catalog of the contents of the Journal, which was published in 1936. The present catalog contains about 16,000 titles, arrangement of which is based principally on the Universal Decimal Classification system as applied to architecture and construction, modified and adapted to meet Japanese needs. There is also a subject index and an index to persons' names, both arranged in a, i, u, e, o order.

Publication was begun in 1956 on what promises to be a useful work: Kabuki nempyō (Chronological Table of the Kabuki Theater) by IHARA Toshirō, compiled and edited by KAWATAKE Shigetoshi and YOSHIDA Teruji. Planned in eight volumes, each averaging approximately 550 pages, this table will cover the history of the traditional Kabuki theater in the cities of Edo (later Tokyo), Kyoto, and Osaka, between the years 1559 and 1907, and will supersede the considerable number of scattered tables and chronologies such as the Hana no Edo Kabuki nendaiki (Chronological Account of the Kabuki Theater in the Flowery Capital of Edo) and its many sequels; Shibai nendaiki (Chronological Account of the Theater); and Kei-Han Kabuki nendaiki (Chronological Account of the Kabuki Theater in Kyoto and Osaka), to name only three of at least 14 titles usually consulted. Of the two volumes so far published and acquired by the Library by the end of 1957, the first (1956) covers the years 1557-1720, and the second (1957) covers 1721-47. The work is a posthumous publication of the material left by the late Professor Ihara (1870-1941), compiled and edited in its present form by Professor Kawatake, director of the Museum of Dramatic Arts at Waseda University, and Mr. Yoshida, director of the Publications Office of the Kabuki Theater in Tokyo.

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Among additions in language and literature is *Ingo jiten* (Dictionary of Japanese Slang and Cryptology), compiled by UMEGAKI Minoru (1956). This includes both slang terms as well as cryptology characteristic of various trades and criminal society. Items are arranged in *a,i,u,e,o* order, with headings in *hiragana* followed by characters, explanatory text, example of use, and the social category to which the term belongs or the historical period during which it was in use if obsolete. The

work also contains 10 essays dealing with slang and cryptology; their definition, differences from technical or colloquial jargon, nature, origins, development, types, structure, usage, and special cryptology dealing with numbers. The indexes are classified under professions and by subject, each arranged in a,i,u,e,o order.

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An ambitious work is Kaisetsu sekai bungaku shi nempyö (Annotated Chronological Table of World Literature), compiled by Існіко Teiji and others (1957). This covers the period from 2500 B. C. to 1955 A. D. in 87 separate sections, each of which is treated separately by country. Each section contains a chronological table of important events. There are separate indexes for persons' names, titles of written works, and newspapers and other periodical publications, each divided into European, Chinese, and Japanese, and all arranged in a,i,u,e,o order by usual Japanese reading regardless of language. The work amounts to a specialized dictionary rather than the usual chronological table, and although it is too elaborate for quick reference, its use is rewarding.

A useful selected bibliography is Kokubungaku kenkyū shomoku kaidai (Annotated Bibliography of Studies of Japanese Literature), compiled by Asō Isoji (1957). Published in commemoration of the sixtieth birthday and the retirement of Prof. HISA-MATSU Sen'ichi of Tokyo University, this contains descriptions contributed by 179 scholars of about 2,000 selected studies of Japanese literature. It includes works published prior to March 1955, and some works in progress, but it excludes studies devoted entirely to Japanese poetics, renga (linked verse), and haikai poetry and prose. The contents are arranged in this order: Japanese literature in general; early, Heian, medieval, modern, and recent periods, each subdivided into subjects germane to that period. The title index is arranged in a,i,u,e,o order.

Among the number of works of its kind already in print, probably the most comprehensive is Haikai daijiten (Encyclopedia of Haikai Poetry and Prose), compiled by Iлсні Tetsuo and others (1957). In a total of about 5,000 headings, this work explains terminology used in works about and in renga (linked verse), senryū (verse), zappai ("unorthodox" or "vulgar" haiku), and modern haiku verse; and names of poets, scholars, research organizations, anthologies, collected works, etc. Names of poets are listed under their most commonly used pseudonyms. Items are arranged in a,i,u,e,o order with headings in characters, followed by reading in simplified kana. Also contained is a chronological table dealing with linked and haikai verse from 951 to 1956. There are separate indexes for titles of written works, persons, seasonal terminology, and miscellaneous items, each arranged in a,i,u,e,o order. There is also a list of terms having unusual or difficult readings, arranged by the total number of strokes in the first character.

Two useful reference tools in English published in Tokyo were received through the kind offices of Miss Naomi Fukuda, Librarian of the International House of Japan Library in Tokyo. Japanese Literature in European Languages, a Bibliography, compiled by the Japan P.E.N. Club of Tokyo (1957), is a work of 69 double-column pages which was compiled by an ad hoc committee for the Twenty-Ninth Congress of the International Association of Poets, Playwrights, Editors, Essayists, and Novelists, held in Tokyo September 2-8, 1957, to provide participants with material which would contribute toward the proposed theme of the meeting, "Reciprocal Influences of Literature of the East and the West." It draws its material from existing standard bibliographies such as those by Wenckstern, Nachod, and Cordier in former times, as well as by Borton, Elisséeff and Reischauer, Yabuki, and the

Far Eastern Bibliography of the Association of Asian Studies in more recent times, and adds subsequent items, monographs, articles in journals, studies and translations, to the end of 1956. The subjects into which it is divided are: general; classical literature; classical theater; modern literature; and juvenile and folk literature, with each section subdivided further. Items are listed by author or translator.

A privately printed work by a compiler who is devoted to the subject is Japanese Literature in English, 1955-56; an Indexed List of New and Reprinted Translations (1957), compiled by Don Brown, who owns one of the most comprehensive libraries of English translations of Japanese works and draws much of his material from obscure sources. This is a title list, and the bibliographical information given is detailed and precise. Because of the increasing number of translations of Japanese literature since World War II, the research scholar has a difficult time keeping abreast of this activity, especially those translations published in newly established, relatively obscure, local journals.

Hebraica 7

Acquisitions from Israel during the past year were satisfactory but not exceptional. Several government serials of considerable value for research were added to the collections. Statistical abstracts on such diverse topics as insurance, level of nutrition, employment, manpower, hospitalization, taxation, and housing are included, as are police and budgetary reports and school curricula. The Yiddish collections were moderately augmented; particularly welcome was the first volume (A-B) of a new biographical dictionary of modern Yiddish literature, the Leksikon fun der nayer yidisher literatur, edited by Samuel Char-

ney and Jacob Shatzky and published by the Congress for Jewish Culture (New York, 1956).

Isaac Ben Zvi, Israel's learned President, has been producing scholarly studies dealing with Palestine and the Jewish Diaspora for more than twoscore years. Volume four of *Eretz-Israel* (Jerusalem, 1956), dedicated to the President on the fiftieth anniversary of his arrival in Palestine, is composed of contributions from scholars working in fields that have engaged his interest. Some notion of Ben Zvi's enormous industry can be had from the bibliography of his writings which this volume contains, a list (exclusive of journalistic and topical articles) of over 300 items.

The Ben Zvi Institute of the Hebrew University, devoted to historical research on the Jewish communities of the Middle East, has issued the first volume of its annual publication, Sefunot (1956). Though the Institute is concerned primarily with Jewish communities in Islamic countries, it has devoted part of this volume to essays on the Jewries of Cochin, Rhodes, and Corfu, and it is anticipated that the publication will retain its wider scope.

A most ambitious undertaking is the Hebrew-language Atlas Yisrael (1956), published by the Department of Surveys of the Ministry of Labour in collaboration with the Bialik Institute. Intended as the national atlas of Israel, this handsome work will comprise more than 500 polychrome maps in as many as 15 colors. The fascicles, the first of which has been received, measure 50 by 70 centimeters and are to be inserted in an accompanying looseleaf The country's geomorphology, binder. geology, climate, hydrology, botany, zoology, landscape evolution, history, population, settlements, agriculture, industry, commerce, communications, and services, as well as the history of Holy Land cartography, will be treated in later parts. AnWh

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[†] Unless otherwise noted, all publications mentioned in this section were issued in Jerusalem.

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cillary materials, including diagrams, tables, charts, and bibliographies, complement the text. The editors expect to complete publication in three or four years.

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The initial map reproduced in the Atlas Yisrael is the subject of a special study by Michael Avi-Yonah entitled The Madaba Mosaic Map (Jerusalem, 1954) which was described in the August 1956 issue of the Quarterly Journal of Current Acquisitions, p. 218-19.

Three new Israeli imprints add to the spate of literature on the Dead Sea Scrolls. Jacob Licht's Megilat ha-hodayot (The Thanksgiving Scroll), published in 1957, was written as a doctoral thesis. The author analyzes the psalms of this scroll from several viewpoints, dwelling more on doctrinal aspects than on matters of style, and arrives at some far-reaching conclusions as to the nature of the sect that produced them.

When the first Qumran cave yielded its seven scrolls in 1947, one was found to be in a state of advanced decay. Unrolling it was out of the question at the time, and as late as 1955 Millar Burrows wrote in his study, Dead Sea Scrolls, that "only very careful, expert treatment can ever unroll enough to recover any considerable part of the text, if indeed this is possible at all." The feat has been achieved by James Biberkraut of Jerusalem, a specialist in restorations, and the scroll, thought at first to be the lost Book of Lamech, is revealed as a compilation of apocryphal tales on the worthies of Genesis, with many points of similarity to the Book of Jubilees. The preliminary publication in Hebrew and English of the better-preserved portions of this Aramaic work is accordingly entitled A Genesis Apocryphon by its redactors, Nahman Avigad and Yigael Yadin. It was published in 1956 by the Magnes Press of the Hebrew University and Heikhal Ha-Sefer.

An exhibit on the Scrolls, which toured a group of collective settlements, is the subject of a portfolio issued by the Al Hamishmar Press. Megilot yam ha-melah (The Dead Sea Scrolls), issued in Tel Aviv in 1957, includes a text, popularly presented, and a series of 20 instructive plates lettered in the style of the Scrolls themselves.

The Dead Sea Scrolls are not the only Hebrew documents to attract scholarly attention in Israel. The Institute of Hebrew Manuscripts of the Ministry of Education was set up in 1950 to assemble reproductions of Hebrew manuscripts scattered throughout the world. The first modest publication of the Institute is a brochure entitled Reshimat tatslume kitve ha-yad ha-'ivriyim ba-makhon (List of Photocopies in the Institute), of which the first part (1957) has been received. The work of N. Allony and D. S. Loewinger, it records copies of Hebrew manuscripts in the libraries of Austria and Germany.

The liturgical text used on Passover eve, the Haggadah, served in the medieval period as one of the main outlets for Jewish artistic creativity. As a consequence, many richly illuminated Haggadah manuscripts survive. From Budapest the Library has The Kaufmann Haggadah received (1957), a facsimile edition of MS. 422 in the collection of the bibliophile David Kaufmann. Edited by Alexander Scheiber for the Hungarian Academy of Sciences, it has plates in full color, and the Library's copy is bound in leather.

Among the year's acquisitions are two volumes of the sumptuous series Corpus Codicum Hebraicorum Medii Aevi, a product of the Ejnar Munksgaard publishing firm of Copenhagen, under the general editorship of Rafael Edelmann. Through facsimile reproduction the firm hopes to preserve for posterity some of the vital records of mankind which might otherwise perish through local disasters. The holo-

graph of Maimonides' Mishnah commentary has been selected to inaugurate the Hebrew manuscript series, as Pars I in three volumes, and the first of these volumes, bearing the Latin title Maimonidis commentarius in Mischnam (Copenhagen, 1956), has arrived. Solomon D. Sassoon, owner of a portion of the codex, provides the introduction. Pars II of the Corpus, in four volumes, is The Pre-Masoretic Bible, a reconstruction of a unique textual tradition by Alexander Sperber on the evidence of four manuscripts. The Library has accessioned volume 1 of Pars II, bearing the title Codex Reuchlinianus (Copenhagen, 1956).

The Hebrew Scripts, by Solomon A. Birnbaum, is the only major work to handle the intricate subject of Hebrew writing in systematic fashion. Birnbaum, who has been called "the foremost living authority on medieval Hebrew paleography," announced publication of his opus before the outbreak of World War II, but it was not until 1954 that it began to appear in fascicles. The 160 collotype plates, embracing some 470 facsimiles, have now been issued and the text is to follow shortly. Scholars hope then to learn to what extent Hebrew paleography may lay claim to being an established discipline.

In 1953, after a lapse of 15 years, publication of the excellent bibliography of Palestinology, Peter Thomsen's Die Palästina-Literatur, was resumed. As his health was failing, Thomsen assigned two younger colleagues, Leonhard Rost and Fritz Maass, to the task of seeing his already completed work through the press. The sixth volume of the bibliography (Berlin, 1953-56), covering the literature which appeared during the years 1935-39, has been received. It is to be regretted that the cover and title page of Band 6, Lieferung 1 give the years of coverage incorrectly as 1935-44. The volume spanning the period 1940-49, finished by Thomsen before his death, is in press. Receipt of Lieferung 1 of Band A (Berlin, 1957) must also be noted. This part carries the work back to 1878, instead of 1895, where volume 1 begins.

Israel's increased awareness of its position as an Asian nation is underscored by an attractive translation of the Gita. Done from the Sanskrit and billed as the first in a series of translations from the originals of the classics of Eastern thought, The Bhagavad Gita (1956), in Hebrew garb, is the work of Immanuel Olsvanger. In his preface the translator remarks that he was encouraged to proceed with the project by the Prime Minister, among others. The book contains a foreword by Martin Buber and an introduction to the Gita by N. I. Nikam of Mysore, India.

Near East

A significant increase in the material received from the Near and Middle East had been expected, but new acquisitions in the languages of this area rose only slightly in number in 1957. Analysis of the receipts shows several significant developments. Increases in Arabic-language materials were 100 percent; and those in the "fringe" languages, i. e. from Central Asia and from minority groups, increased 50 percent, offsetting the great decline in Armenian and the smaller declines in Persian and Turkish.

Explanation of these shifts is not always possible; in fact, any explanation must be made with great caution, in view of the rapidly changing political, social, and economic situation in the area.

Most significant is the large increase in Arabic-language receipts. Although the supply from Egypt is still small, the increases from Lebanon and Iraq have more than made up for the difference. Worth consideration also is the fact that the political situation in Jordan, the Arabian Peninsula, S has no It is

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It is also significant that the flow of publications from Central Asia in the various Turkish- and Persian-related languages and from the Caucasus continues and even increases. Allowance must be made for the fact that some of this materia! is not of high literary caliber nor of permanent value. These publications do, however, represent what is permitted to be published.

No explanation can be offered for the large decline in Armenian material.

The decline in receipts from Turkey finds its probable explanation in two factors. First, receipts under the priced exchange agreement with the National Library of Turkey in Ankara show further decline. This conclusion is based only on the publications brought to the Near East Section's attention which have not been received. A second factor is that the economic situation in Turkey may have had considerable effect on the amount and character of publication. A comparison between the offerings in the reissued national bibliography with those in the older issues may serve to vindicate that conclusion.

An acquisition field trip was made to the area by the Head of the Section in 1957. Its purpose was to extend the coverage of the Section's acquisitions program to the parts of the area which had not been visited before, and to review the operation of the program in the countries from which the bulk of receipts has come. The results of the trip will not appear statistically in this report, but the diagnosis of the year's receipts given above was made largely on the basis of field observation.

It would be impossible to note or even list every significant title received during the year; only representative items can be noted. Even with this limitation, choice is most difficult. Representative of the publications of the University of Tehran is Dr. Jaza'iri's Oavānīn māliyah (Tehran, 1956). In this work, devoted to legal aspects of Iran's finances, the author, a former Minister of Education, treats the formation of the Iranian budget from the constitutional period to date.

Dictionaries are represented by Farhang Amir Kabīr (Tehran, 1955). This is a modern Persian-language dictionary, desksize, emphasizing modern usage adapted to technology and science.

For Iranian poetry, two items represent the effort of Iranian publishers to collate and bring up to date the best efforts of the past. Ghazaliyat Shems-i-Tabrīzī (Tehran, 1956) is a comprehensive modern edition of the Ghazals, ascribed to Shams-e Tabrīzī, the famous Sufi poet of the thirteenth century. A similar treatment has also appeared of the collected works of the eleventh-century Nasir-i-Khasraw, Diwan ash'ar (Tehran, 1956). Together the two represent modern Persian literary criticism in the presentation of their work and the style of printing.

History, another favorite Iranian subject, is represented by Dr. Said Nafīsī's first volume (Tehran, 1956) of *Tarīkh ijtima'i ve siyasi Iran* (Social and Political History of Iran in Modern Times), in which he deals with Iran from the beginning of the Qajār dynasty to the end of the first Russian war, 1796–1828.

History and biography are mingled in Amir Kabir ve Iran (Tehran, 1955). The author, Dr. Feridun Umiyat, has written a historical life-study of the famous Prime Minister of a hundred years ago with emphasis on his contribution to Iran.

Translations occupy a prominent place in Iranian publications. A representative volume is the translation of George Sarton's Ancient Science and Modern Civilization (Tehran, 1955), which has the same title in Persian. Arabic titles present greater diversity than Persian as to place of publication, subject, and authorship.

First, there is Tarikh al Ulama' wa alruwāt li al 'ilm al Andalus (History of the Leaders of Science in Spain), by al-Faraḍi. This volume was published in Cairo in 1954 and shows the inclusive interest of the centers of the Arab world in past history.

Another title is from the western Arab world, Kitab al-abḥath al-sāmiyah fi al-mahakīm al'islamīyah (History of Treaties on Islamic Courts), by Mohamed el Murir (Tetuan, 1951). The author was the president of the Muslim religious court of appeals in the northern zone of Morocco before the unification of the country.

Received only last year was Bulugh almarām fi sharn misk al khitām (1939), a Cairo edition of a Yemini work which is concerned with the history and geography of the Yemen up to 1900, particularly the place-names.

Representative of the publications from Iraq is the *Shu'ara' al-Ghariy* (Najf, '1954). The work comprises eight volumes and deals with the poets of Najf, giving extended citations from their works.

From the French Institute in Damascus came a critical edition by Sami Dahan of the Al-A'lāq al-khaṭirah (Damascus, 1956), the description of Damascus by Ibn Shaddād, a historian and geographer of the thirteenth century.

India has been a source of Arabic publications, for the most part editions of classical writers. A good example is the *Lisān al mizān* of Ibn Hajar al 'Asqalāni. This six-volume work, a biographical collection by a famous traditionalist of the fifteenth century, was published in Hyderabad in 1912–13.

Another older publication recently acquired is the Fath al qadīr of al-Shawkāni. This commentary on the Quran in 3 vol-

umes, the work of a Yemeni author, was published in Cairo in 1931.

A new and improved edition of al-Ash'ari's Maqālat al Islamīyīn (two volumes in one, Cairo, 1950–54) is also noteworthy. This work on Muslim sects by the famous tenth-century founder of Muslim orthodoxy, by comparison with the older Istanbul edition, gives convincing evidence of the improved printing and editorial work of the modern Arabic presses.

South Asia

As usual the Library's total acquisitions, together with significant articles selected from over 200 periodicals, are listed in the sixth volume of the Southern Asia Accessions List. This is now issued monthly and contains entries for the acquisitions of American libraries specializing on Southern Asia.

No significant publications on Ceylon arrived last year except the usual government serial publications, annual reports, and the like. Government publications continue to offer material of reference value, particularly in the field of statistics.

An important travel diary on Tibet which appeared in 1956 in translation from the Italian is Giuseppe Tucci's To Lhasa and Beyond; Diary of the Expedition to Tibet in the Year MCMXLVIII. With an Appendix on Tibetan Medicine and Hygiene by R. Moise (Rome, 1956). The translation is by Mario Carelli.

A new periodical which began appearing in Katmandu, Nepal, in May 1956 is the Journal of the Nepal Council of Asian Relations and World Affairs. It is in both English and Nepali, and demonstrates the forward march of a once isolated country.

D. R. Regmi's A Century of Family Autocracy in Nepal; Being the Account of the Condition and History of Nepal During the Last Hundred Years of Rana Autocracy, 1846-1949 (Katmandu, 1950) presents an interesting political history of

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Indi loca a q Nepal from the progressive point of view of the Nepali National Congress, child of the Indian National Congress. The Coronation Book of Their Majesties of Nepal (Katmandu [1956?]) is a collector's item. In quaint English and in Nepali it offers interesting background material as well as an account of the coronation. It is interestingly and profusely illustrated both in color and in black and white.

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Publications from Pakistan continue to trickle in, although not in the desired quantity. Government publications continue to be the best source of information.

Useful for economists is the Weekly Supplement of the Economic Digest, issued by the Institute of Development Economics at Karachi. The Library has about 25 issues of Vol. 2 for 1957.

A very useful reference work is the Biographical Encyclopedia of Pakistan (Lahore, 1955). One has to exercise skill in finding a name, since no accepted standard system of entry of Muslim names has yet been devised for Pakistan.

Life in East Pakistan, by Choudhury Shamsur Rahman (Chittagong, 1956), offers a popular account of a territory little known to Americans.

Two works on South Asia of interest to sociologists are Status of Women in South Asia, edited by Angadipuram Appadorai (Bombay, 1954), and Kashi Prasad Saksena's Muslim Law as Administrated in India & Pakistan (3d ed., Lucknow, 1954).

The Government of the disputed territory of Kashmir promulgated its constitution as a state within the Indian Union in 1956. It is entitled *The Constitution of Jammu and Kashmir* (Jammu, 1956).

Since independence India has become progressively interested in the art of administration. In March 1955 the first Indian Institute of Public Administration, located in Delhi, began the publication of a quarterly *Indian Journal of Public Administration*.

A very useful work to students of Indian music is Vol. 1 (A, B, C) of Raga nidhi, Encyclopedia of Indian Ragas; a Comparative Study of Hindustani and Karnatak Ragas by B. Subba Rao (Poona, 1956). It is the most complete analysis of ragas so far published.

A beautiful edition of Gujarat Jain paintings in the classic style is Manilal Sarabhai Nawab's Masterpieces of the Kalpasutra Paintings (Ahmedabad, 1956). The edition is limited to 125 copies.

Of interest to medical studies are two thorough works: Glossary of Indian Medicinal Plants, by Ram Nath Chopra, S. L. Nayar, and I. C. Chopra (New Delhi, 1956), and Pharmacopoeia of India (Delhi, 1955), issued by the Ministry of Health of the Government of India.

A new monthly geographical journal appeared in August 1956, entitled *The Indian Geographer*. It is published by the Association of Indian Geographers in New Delhi.

The Bulletin of the National Geographical Society of India has been superseded by the National Geographical Journal of India, Vol. 1, Pt. 1, September 1955, published in Banaras by the National Geographical Society of India.

Several important histories of literature and bibliographies were received during the year. Buddhadeva Bose's An Acre of Green Grass, a Review of Modern Bengali Literature (Bombay, 1948) discusses the work of Rabindranath Tagore, Pramatha Chaudhuri, Saratchandra Chattopadhyay, and Nazrul Islam. There are also chapters on Bengali poetry and prose. Jyotish Chandra Ghosh's Bengali Literature (London, 1948) offers a succinct history of Bengali literature from its inception through the nineteenth century.

For the earliest period of Tamil literature the History of Tamil Language and Literature; Beginning to 1000 A. D., by S. Vaiyapuri Pillai (Madras, 1956), is an essential reference tool.

An invaluable aid to librarians and students of the modern vernacular literature is A Select List of Kannada Books, 1824–1956 (Dharwar?, 1956), compiled by K. S. Deshpande and issued by the Karnatak University. It lists almost a thousand books which were featured in an exhibition in India in 1955. Similar lists for the other major vernaculars of India were presumably prepared, but no other has yet been received.

The Catalogue of Periodicals, Newspapers & Gazettes (Calcutta, 1956) in the National Library of Calcutta uncovers a store of riches, particularly material issued in the eighteenth and early nineteenth centuries. It was compiled by Benoy Sen Gupta, head of that library's Cataloging Division.

A most welcome item is the Experimental Fascicule of the *Indian National Bibliography* (Calcutta, 1957). It is the precursor of the monthly national bibliography to be prepared at the National Library in Calcutta, planned for 1958.

For the field of history a very readable and scholarly work is The Indo-Greeks, by A. K. Narain (Oxford, 1957), the outgrowth of a doctoral dissertation. A new edition of Asoka's Edicts, edited and translated by Amulyachandra Sen (Calcutta, 1956) is a welcome addition to the studies of these historical fragments. Jagdish Saran Sharma has added a companion volume to his Mahatma Gandhi: A Descriptive Bibliography. It is Jawaharlal Nehru: A Descriptive Bibliography (Delhi, 1955).

As usual, there have been numerous publications on Indian philosophy. Not to be missed are Louis Renou's translation of Hymnes spéculatifs du Véda (Paris, 1956); Govind Chandra Pande's Studies in the Origins of Buddhism (Allahabad, 1957); Jadunath Sinha's A History of Indian

Philosophy, Vol. 1 (Calcutta, 1956), which covers the upanishads, epics, Purāṇas, the Gītā, and the "six systems"; Umesha Mishra's History of Indian Philosophy, Vol. 1 (Allahabad, 1957), from the Vedas through Buddhism; and Erich Frauwallner's Geschichte der indischen Philosophie, 2. Bd. (Salzburg, 1956). This second volume covers the Vaiśeshika system, Jainism, and materialism. The first volume, which was published in 1953, covered the beginnings, Jainism and Buddhism, Sāmkhya, and yoga.

During the past year the South Asia Section's vernacular collections were enhanced principally by the acquisition of books in Hindi, Urdu, and Bengali in descending order of the volume of receipts. For the most part the books in Urdu and Bengali are novels, some of which are based on historical themes, particularly the period of the Mutiny of 1857, which became highlighted during the centennial celebrations. The Hindi titles, however, are far more diversified, and it may be well to draw attention to some of them that seem to be of special interest and merit.

Pandita Rāmadīna Pāņdēya has attempted to shed light on the early military history of India in his book entitled Prācīna Bhārata sāngrāmikatā (Patna, 1957), which is based on the author's extensive perusal of the whole range of Vedic literature, the Purānas, epics (Mahābhārata and Rāmāyana), Rājataranginī, Manusmṛti, Nītiśāstras, Kautilya's Arthaśāstra, and other Sanskrit texts, as well as works by Western authors relevant to his thesis. There are chapters on flags, banners, ensigns and other military symbols, manner of dress, system of education, importance of Indian topography in military tactics and planning, rules of warfare (yuddhadharma), weapons, various kinds of warfare, i. e. with use of chariots, infantry, elephants, horses, hand-to-hand encounter, etc. There are also brief appendice ments (the ap) The ter from Sa and bar One

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pendices on such subjects as musical instruments employed in ancient warfare, and the application of divination (śakuna). The text is interspersed with quotations from Sanskrit sources and the various flags and banners are illustrated in color.

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One of the many volumes that was born of the centenary celebration of the Mutiny of 1857 is a history of that famous uprising in Hindi by Śrīnivāsa Bālājī Hardikara (New Delhi, 1957), entitled simply Athāraha sau sattāvana (1857). The author expresses his concern over what he alleges to be a serious misrepresentation of the facts of the events of 1857 as recorded in histories of India by British scholars as well as by Indians who have imitated them, and he proceeds to explain why the British felt it necessary to distort and suppress the truth. The account has been put together from a variety of sources, and the author specifically states that he has perused books in English, Hindi, Marathi, and Bengali; and since during his early years he derived much pleasure from listening to older people recounting the events of 1857, the vividness of certain parts of his narrative need hardly occasion surprise.

From the pen of the prolific scholar Rāhula Sankṛtyāyana has come a book in Hindi of somewhat different character from his other produtions, a life of Akbar, the great Mogul. It is entitled simply Akabara (Akbar), Allahabad, 1957. Nearly a third of the volume is devoted to biographical sketches of persons closely associated with Akbar, among whom Abūl Fazl, Akbar's dearest friend, Bīrbal, Tānsēn, and Todar Mal may be mentioned. The life and times of India's other great emperor, Aśoka, are set out also in Hindi in Yadunandana Kapūra's Aśōka, Aligarh, 1955, which, like the biography of Akbar by Sānkṛtyāyana, will be warmly welcome to Hindi-speakers who have been largely exposed to these great personages through the medium of English.

In the years following independence Indians have more and more been writing their own history, and much of this in the various vernacular languages. One of the most recent productions of this type is Hindū Bhārata (Hindu India), Allahabad, 1957, by Ratibhānu Simha, known as "Nāhara." This work covers Indian history from prehistoric times (prāgaithihāsika kā $la \ s\bar{e})$ to about the twelfth century ($b\bar{a}ra$ havīm śatābdī taka), but, as implied in the title, eschews any mention of the incursions of the Muslims during the latter part of this period. The work is of a general narrative character and undocumented by references to sources. Of precisely similar form is the same author's Turka-Aphagana kālīna Bhārata (India in the Time of the Turks and Afghans), Allahabad, 1957, which continues the story of India's history to the foundation of the Mogul dynasty by Bābar in the early part of the sixteenth century.

In the past few years the number of publications in Hindi purporting to treat of technical subjects has been increasing, and the Library has received a fair sampling of these. Remarkable in this regard is a work on entomology by Jagapati Caturvēdī entitled Kīṭa-patangōm kā samsāra (The World of Insects), Allahabad, 1957, which exhibits a great quantity of technical terms, most of which have been converted into Hindi by the translation-loanword process, although there is an unavoidable sprinkling of English words too. Thus, "palaeozoic" is rendered by purajantuka, "orthoptera" by rjupaksha kīţa, but "Devonian" and "Cambrian" are retained. Due to the ineptitude and inadequacy of existing Hindi dictionaries and the extreme newness of the terminology adopted-probably much is the creation of the author himself—the book is not easy to read, and it would have proved helpful had a table of equivalents been appended. The book is amply illustrated by line-drawings.

Another example of a technical book in Hindi replete with newly coined words is Navīna Bhārata kā ārthika vikāsa (The Economic Development of New India), Jaipur, 1957, by Māngīlāla Solānkī, S. C. Saksēna, and R. S. Kulaśrēshtha. The subject is approached in all its manifold facets, and where new technical terms are introduced, their English equivalents are included in parentheses. Lengthy chapters are devoted to industry (udyōga), labor (śrama), transport (yātāyāta), and foreign trade (vidēšī vyāpāra).

Since the inception of the Indian constitution a considerable number of books have appeared in English in which attempts have been made to clarify and analyze that lengthy and complex document. Few, however, have been forthcoming in Hindi, the language which the constitution expressly declares to be India's national tongue. In view of this, M. V. Pāyalī's Bhāratīya samvidhāna: svarūpa aura vikāsa (The Indian Constitution-Nature and Development), New Delhi, 1957, is especially welcome to those concerned with a proper evaluation and comprehension of this epoch-making document. After adumbrating some of the difficulties involved in writing India's constitution in a brief preface, partly perhaps by way of apology for its unusual length and complexity, the author proceeds to present the background of historical facts which led up to the creation of the Constituent Assembly. remainder of the volume is devoted to a careful discussion of the various departments covered by the constitution, which is treated in its emended form following the reorganization of the states. Many of the technical terms used are explained by their English equivalents in the footnotes—a very useful addition, since these words are for the most part new and unfamiliar. The utility of the volume would have been enhanced by the inclusion of an index.

The interest that manifested itself during the past year in the great uprising of 1857 is reflected in a historical novel by Rājēśa Dīkshita entitled Vājidaalīshāha (i. e. Wājid 'Alī Shāh), Agra, 1957. The author takes pains to point out that all the characters, events, and the general details of his book are based on historical material which he succeeded in collecting after a year of arduous research in books and archives of the period. Wājid 'Alī Shāh, the last of the so-called Nawabs of Oudh, is a much-maligned personage in Indian historical annals, and Srī Dīkshita feels that while he may not have been a truly able ruler (kuśalaśāsaka), he was not wholly reprehensible or incompetent either. Ample background for a comprehension of the social and cultural forces at play during the first half of the nineteenth century is furnished in the course of the narrative.

Very useful for students of Indian history, in particular Maratha history, is a Marathi work entitled Aitihāsika gharānyāmcyā vamśāvalī (Genealogies of Historical Families). It was issued at Bombay in 1957 by the State Board for Historical Records and Ancient Monuments as No. 1 of its Historical Publication Series. The compilation was initiated by V. S. Chitale, and after his death was completed by G. S. Sardesai, editor of the monumental 46-volume series, Selections from the Peshwa Daftar. Though the present volume is entirely in Marathi, all persons familiar with the Devanagari script will be able to make use of it, since it consists principally of genealogical tables and very little textual matter. There is an index to the personages whose names appear in these tables, a necessary adjunct to the fullest utility of this volume. Among the prominent families presented are those of the famous Rānī of Jhānsī and Hōļkar Dynasty.

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A postwar study which brings together the historical and social aspects which have developed in Burma during the past decade is the volume prepared by Hugh Tinker, lecturer on modern history of Southeast Asia at the School of Oriental and African Studies of the University of London, entitled The Union of Burma, a Study of the First Years of Independence (London, New York, 1957). The account reflects the considerable degree of social change and disintegration in Burma as an aftermath of World War II, the continuing civil war, and the Chinese Nationalist invasion. As a historian the author presents an orderly sequence of the principal developments in Burma during the postwar period. In describing the Pyidawtha (Welfare State) plan for social, cultural, economic, and political development of the new Burma, he presents individual chapters dealing with religion, education, agriculture, trade, defense, and foreign relations. The study includes a useful biographical section and a brief list of documents consulted.

A monograph which describes the manner in which Burmese manuscripts were written during the past two centuries is Some Observations on Libraries, Manuscripts and Books of Burma from the 3rd Century A. D. to 1886 (With Special Reference to the Royal Library of the Last Kings of Burma) (London, 1956), by E. P. Quigly. The discussion of the library of the Burmese kings includes many interesting works on law codes, rulings, political thought, history, art, and warfare, and a short bibliography is included.

Indonesia

Bibliography of West New Guinea (New Haven, 1956), by Klaas W. Galis, is a timely list of references dealing with West

Irian, an area which is extremely important in the national aspirations of present-day Indonesia. The compilation, issued in the Bibliography Series of the Southeast Asia Studies program at Yale University, consists of more than 1,300 titles of both scientific and popular interest in the fields of botany, geology, and ethnology. The titles were drawn from the card file of the library of the Ethnological Institute of Utrecht and the library of the Royal Tropical Institute of Amsterdam's branch located in Hollandia, West Irian.

A publication useful and handy for those who want to know the economic situation in Indonesia with particular reference to the world market is a book by Sumitro Djojohadikusumo entitled Penerbit indira (A Mixture of Economy), Djakarta, 1951. The book contains a collection of articles which had been previously published in newspapers and periodicals, giving data about the economic situation in Indonesia in former years and more recent times. Interpretations and opinions are published here for the first time. The author is a professor of the Faculty of Economy in the University of Indonesia, and has been referred to as "Indonesia's top economic and financial expert."

The Ministry of Information of East Indonesia issued in 1945 a narrative of the Japanese occupation of the archipelago entitled 1261 hari dibawah sinar matahari terbit 6 Maart 2602—17 Aug. 2605 (1,261 Days under the Rays of the Rising Sun, March 6, 1942—Aug. 17, 1945). This presents all events in their chronological order and gives a real picture of the struggle, distress, and oppression of the Indonesian people during the occupation period. All titles of rank or position of the Indonesian leaders are given in Japanese in transliterated form, and the dates used are those of the Japanese era.

Another publication issued by the Ministry of Information of the Republic of

Indonesia is a document called Lukisan revolusi rakjat Indonesia, 1945-1949, (Drawings of the Revolution of the People of Indonesia, 1945-1949), Djakarta?, 1949. Following a foreword by President Sukarno, this unusual and rather good collection of photographs presents a pictorial account of important events and particular Indonesian leaders. This is a book which will be used as a historical document in telling the story of Indonesian history after its independence. Although the photographs carry no commentaries, they do give a unique description of the struggle and revolution of the people of Indonesia.

A volume which will be of value to librarians and area specialists concerned with the acquisition of publications from Indonesia is the annual entitled *Pekan buku Indonesia 1954* (Indonesian Book Market, 1954), Djakarta, 1954.

Other Indonesian books received deal with the Indonesian language and literatures of the islands. Kamus umum bahasa Indonesia (General Dictionary of the Indonesian Language), Djakarta, 1954, by W. J. S. Poerwadarminta, is a large volume of nearly 1,000 pages, now appearing in a second edition. Kepustakaan Djawa (Javanese Literature), Djakarta, 1952, by Raden Purbatjaraka and Tardjan Hadidjaja, Kasoesastran Soendo (Sundanese Literature), Djakarta, 1948, and Kasusastran Sunda; pikeun di sakola guru, S. M., S. M. A. djeung sapapadana (Sundanese Literature, for the Use of Teachers' Colleges, Senior High Schools, and Others), Djakarta, 1952, by P. Nataprawira, are three publications of interest to persons concerned with the literature of Indonesia.

Thailand

A book which meets a long-standing need in the field of Thai history as the first critical study based on Siamese sources is Siam Under Rama III, 1824–1851 (New

York, 1957), by Walter F. Vella. The early chapters present in summary form information about the government, court affairs, Buddhism, and the acts in early nineteenth-century Thailand. The principal part of the study is a broad examination of the policies of Thailand under management of her imperial system of tributary vassal states-Laos, Cambodia and part of Malaya-and the development of a foreign policy which enabled Thailand to succeed in dealing with Western pressures and thereby preserve her freedom, a position unique in Southeast Asia. The checklists of Thai and Western sources consulted will prove valuable to librarians in their acquisition of books on Thailand.

Philippines

The Philippine Studies Program at the University of Chicago has recently published in four volumes The Robertson Translation of the Pavon Manuscripts of 1838-1839 (1957). The fifth in a series of transcripts of texts, translations, rare imprints, and other papers, these translations provide in manuscript form the stories and legends of the Bisayan island of Negros, along with the personal observations and accounts of customs from native informants of Father José María Pavón y Araguro. The four parts are: Stories of the Indios of This Island (Negros) (Transcript No. 5-A); The Ancient Legends of the Island of Negros: Book First (Transcript No. 5-B); The Ancient Legends of the Island of Negros: Book Second (Transcript No. 5-C); and Stories of the Indios of the Olden Time and of Today (Transcript No. 5-D).

The value of the transcripts is increased greatly by the confirmed loss of the Pavón originals in the burning of the Philippine National Library during the Battle of Manila in February, 1945.

Transcript No. 5-A brings together the few scattered facts about the life of the Spanish compiler, Father Pavón.

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Slavica: USSR—Science and Technology¹

THE LITERATURE on the subject of science and technology included in this annual report of acquisitions from the Soviet Union represents a sampling of Soviet publications. No attempt was made to provide a comprehensive survey of all items received, since the purpose of this report is only to familiarize librarians and other interested persons with the type and level of the books acquired last year. A complete listing of all acquisitions is published in the Monthly Index of Russian Accessions. In addition to a few original works and collections the bulk of the material mentioned in this report consists of textbooks and manuals for university students. These publications are, for the most part, endorsed by the Soviet Ministries concerned as being in conformance with curricula requirements. Frequently they are also suggested as reference books and as recommended reading for professional personnel, thereby indicating that many of the textbooks are not simply general introductory works but rather comprehensive publications written on a high, scholarly level. Because of the increasing interest in the quality and scope of Soviet scientific and technological education at different levels, a few texts prepared for schools below university level have been included.

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The large number of Soviet publications

received during the year made it virtually impossible to include within the scope of this report the fields of natural sciences, such as biology, zoology, and botany. Only the main areas of interest—mathematics, physics, geophysics, chemistry, and technology—were considered.

Readers are referred to the Current Digest of the Soviet Press, published by the Joint Committee on Slavic Studies of the American Council of Learned Societies and the Social Science Research Council, for extracts and translations of the more important articles and reviews in Russian newspapers. The Monthly Index of Russian Accessions includes English translations of all Russian titles and lists contents of many periodicals received by the Library.

Mathematics

In the field of mathematics few original works are found among the various types of monographic literature received by the Library of Congress; textbooks still predominate.

A. I. Markuchevich's new text for university students of physics and mathematics, Kratkii kurs teorii analiticheskikh funktsii (Short Course in the Theory of Analytical Functions), 1957, is based upon his earlier work, Teoriia analiticheskikh funktsii, published in 1950. N. S. Piskunov drew from his teaching experience under the guidance of Academician V. V. Golubev in writing

¹ The writer of this report is indebted to Norman W. Friedman of the Reference Department for research assistance he contributed to it.

his text, Differentsial'noe i integral'noe ischislenie dlia vtuzov, 1957, which was prepared in conformity with the higher technical school curriculum requirements for the course in differential and integral calculus.

Kharkov University published, as a separate volume, V. A. Steklov's paper, Ob asimptoticheskom vyrazhenii nekotorykh funktsii, which deals with asymptotic behavior of solutions of linear differential equations, in 1956. It had first appeared in French in 1907 in the reports of the Kharkov Mathematical Society.

Boundary problems for harmonic functions frequently arise in the mathematical analysis of many important questions in the fields of physics and mathematics. In order to eliminate the tedious and time-consuming computations involved, L. V. Kantorovich, V. I. Krylov, and K. E. Chernin, in Tablitsy dlia chislennogo resheniia granichnykh zadach teorii garmonicheskikh funktsii, 1956, presented tables for their numerical solution.

A collection of classical treatises on Lobachevskii's geometry was published in a volume entitled Ob osnovaniiakh geometrii; sbornik klassicheskikh rabot po geometrii Lobachevskogo i razvitiiu ee idei (On the Foundations of Geometry; Collection of Classical Works on Lobachevskii's Geometry and the Development of His Concept), 1956. The volume contains three treatises by Lobachevskii and a number of classical papers written by mathematicians interpreting and developing his ideas on geometry. The book appeared as part of the Klassiki estestvoznaniia (Classics of Natural Science) series and was edited by A. P. Norden, who also wrote the introductory article. A booklet entitled Elementardokazateľ stvo neprotivorechivosti planimetrii Lobachevskogo, 1956, devoted to the hundredth anniversary of Lobachevskii's death, was written by B. N. Delone. This short treatise is intended for readers having only a secondary-school education who desire an elementary understanding of Lobachevskii's argument concerning the proof of the fifth Euclidian postulate.

M. V. Pototskii addressed his book on analytical geometry, Analiticheskaia geometriia na ploskosti (Analytical Geometry in the Plane), 1956, to undergraduate and graduate students of pedagogical institutes and to secondary-school teachers. The author discusses his subject in reference to curriculum problems, its application to different branches of natural science, and methods of applying it in the instruction of elementary mathematics. The second edition of Lektsii po differentsial'noi geometrii, Kharkhov, 1956, is based upon A. V. Pogorelov's lectures at Kharkov University on differential geometry. The book is arranged differently from the 1955 edition and, in addition, the demonstrations which it contains have been improved over the earlier ones. S. P. Finikov's Teoriia par kongruentsii (Theory of Pairs of Congruency), 1956, is, in large measure, the product of a seminar on classical differential geometry held at Moscow University.

One of the works marking the centenary of the birth of the famous Russian mathematician, Aleksandr Mikhailovich Liapunov (1857-1918), is V. I. Zubov's Metody A. M. Liapunova i ikh primenenie (The Methods of A. M. Liapunov and Their Application), 1957. The author comments on the second method of Liapunov, which provides a thorough development of the theory of the equilibrium of invariant groups of dynamic systems of a general nature in metric space. The book is designed to enable graduate students, scientific personnel, and engineers to obtain advanced knowledge in the theory of equilibrium.

The theory of random functions and its application to problems of automatic control are treated in a comprehensive publication sluchain zadacho 1957. A. I.

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A. I. Mal'tsev's manual for university students majoring in physics and mathematics, Osnovy lineinoi algebry (Principles of Linear Algebra), originally published in 1948, was revised for its second edition in 1956. Kharkov University published Academician S. N. Bernshtein's work, Analiticheskaia priroda reshenii differentsial'nykh uravnenii ellipticheskogo tipa (The Analytical Nature of Solutions of Differential Equations of the Elliptical Type), 1956. It includes a commentary by N. I. Akhiezer, who also edited the publication.

In his work on variational methods of investigation of non-linear operators, Variatsionnye metody issledovaniia nelineinykh operatorov, 1956, M. M. Vainberg tries to systematize the material originally published in various Russian and non-Russian scientific periodicals over the past 25 years.

A thorough knowledge of mathematical analysis and an understanding of the theory of functions of a complex variable are prerequisite to reading T. A. Rozet's mathematical work for radio engineers and advanced students in this field, Elementy teorii tsilindricheskikh funktsii s prilozheniiami k radiotekhnike (Elements of the Theory of Cylindrical Functions as Applied to Radio Engineering), 1957.

The Institute of Mathematics of the Ukrainian Academy of Sciences published Obshchie vychislitel'nye metody Chebyshevskogo priblizheniia, Kiev, 1957—E. IA. Remez's work on general computation methods based upon Chebyshev's theory of approximation. Remez also discusses the application of Chebyshev's theory to the fields of mechanics and electrical engineering and to other branches of physics.

Among the works received dealing with computation techniques is a book written by E. G. Larchenko in 1956, entitled Mekhanizatsiia vychislitel'nykh rabot (Mechanization of Computation Work), and addressed to agricultural institute students specializing in rural surveying. publications in this field, but on a higher level, include an 86-page report published by the Institute of Precision Mechanics and Computation Techniques of the Academy of Sciences on the memorizing device on the cathode-ray tubes of the Academy's high-speed electronic computers. The report, entitled Zapominaiushchee ustroistvo na elektronnoluchevykh trubkakh bystrodeistvuiushchei elektronnoi schetnoi mashiny Akademii Nauk SSSR, 1957, was prepared by V. N. Laut and L. A. Liubovich. A paper dealing with electron computers, read by S. A. Lebedev at the plenary meeting of the Session on Scientific Problems of Productional Automation held by the Academy of Sciences of the USSR was published in 1956 as a 20-page pamphlet entitled Elektronnye vychislitel'nye mashiny.

The writing of textbooks in mathematical statistics received a new impetus in 1954 with the reintroduction of courses in this subject in higher schools of economics. Two examples of publications in this field are I. G. Venetskii and G. S. Kil'dishev's manual, Posobie po matematicheskoi statistike, 1956, and B. S. IAstremskii's text, Matematicheskaia statistika, 1956. Both books were written for university economics students, but the latter was particularly designed for those who are not specializing in statistics. In an allied field, A. IA. Boiarskii, in Matematika dlia ekonomistov (Mathematics for Economists), 1957, discusses the elements of analysis of infinitesimals, the theory of probability, and mathematical statistics.

A new text on theoretical mechanics for university students of mathematics, physics, and engineering, entitled Teoreticheskaia mekhanika, was compiled by A. L. Naumov in 1957. The Library has received the first part of this work, which deals with mechanics of particles and the free system of particles. It also contains material on classical Newtonian mechanics and the principles of the theory of relativity and quantum mechanics. The second part of the book will deal with the systematic treatment of the mechanics of attached systems and will be concluded with a discussion of elastic, liquid, and gaseous bodies.

Physics

A volume of collected articles published in memory of Albert Einstein is entitled Einshtein i sovremennaia fizika (Einstein and Modern Physics), 1956. This small work contains Einstein's own account of his creative activity as well as articles written by such noted Soviet scientists as E. V. Shpol'skii, A. F. Ioffe, V. A. Fok, and others, which previously had appeared in the Soviet scientific journal Uspekhi fizicheskikh nauk (Vol. LVII, No. 2, 1955, and Vol. LIX, No. 1, 1956).

Papers originally presented at the Conference on Philosophical Problems of Modern Physics, which was held in Kiev March 17-19, 1954, under the sponsorship of several Institutes of the Ukrainian Academy of Sciences, were published collectively under the title Filosofskie voprosy souremennoi fiziki in 1956 under the editorship of M. E. Omel'ianovskii. B. G. Kuznetsov's monograph, Osnovy teorii otnositel'nosti i kvantovoi mekhaniki v ikh istoricheskom razvitii (The Principles of the Theory of Quantum Mechanics in Their Historical Development), was published in 1957 under the sponsorship of the Institute of the History of Natural Science and Engineering of the Academy of Sciences of the USSR. A prerequisite for understanding Kuznetsov's book is a good knowledge of differential and integral calculus.

A collection of V. A. Fok's works on secondary quantization and quantum electrodynamics, written between 1928 and 1937 and published in non-Russian journals, was put out by the University of Leningrad in 1957 under the title Raboty po kvantovoi teorii polia (Works on Quantum Field Theory). Since many of these journals are difficult to obtain in the Soviet Union, this book facilitates the task of Russian scientists who wish to read this material.

An introduction to the quantum field theory by N. N. Bogoliubov and D. V. Shirkov is entitled *Vvedenie v teoriiu kvantovannykh polei*, 1957. The authors present a systematic exposition of the modern theory of quantum field covering the period from its early formulation to the latest developments in this subject.

The application of operational methods for the solution of some problems of mathematical physics is presented by Z. S. Agranovich and A. IA. Povzner in Primenenie operatsionnykh metodov k resheniiu nekotorykh zadach matematicheskoi fiziki, 1954, which was published by the Kharkov University Press.

For students in departments of physics and mathematics of pedagogical institutes, a textbook of methods of mathematical physics was written by V. I. Levin under the title *Metody matematicheskoi fiziki*, 1956. This manual is divided into two parts, the first dealing with mathematical theory and the second with differential equations of mathematical physics.

In the field of plasticity there are the published works of N. M. Beliaev (1890-1944) on the theory of elasticity in plasticity, Trudy po teorii uprugosti i plastichnosti, 1957. The book, part of the series Biblioteka russkoi nauki (Library of Russian Science), also contains a biography of the author and a bibliography of his publications.

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Another contribution to this field is L. M. Kachanov's textbook, Osnovy teorii plastichnosti (The Principles of the Theory of Plasticity), 1956, which is based on the author's lectures at Leningrad University.

In the field of applied nuclear and atomic physics there is D. I. Voskoboinik's IAdernaia energetika (Nuclear Power Engineering), 1956, which explains, for popular reading, the working principles of the nuclear reactor installed to produce industrial power and describes the operation of nuclear-power plants. The book is divided into four chapters which deal with the physical principles of nuclear power, material and equipment for nuclear reactors, nuclear reactors, and nuclear power installations.

Another popular work in this field is G. A. Zisman's pamphlet Stroenie atomnogo iadra, published in Leningrad in 1956 by the Society for the Propagation of Political and Scientific Knowledge of the USSR. The author provides an elementary explanation of the structure of the atomic nucleus.

Atomic warfare and protection against light radiation of atomic explosions are described by M. P. Arkhipov in *Svetovoe izluchenie atomnogo vzryva* (Visible Radiation of Atomic Explosions), 1956.

Moscow University published the impressive work, Fizika goreniia i vzryva, 1957, by L. N. Khitrin, who had assembled his material from a variety of sources and arranged it into a unified course to be used by universities which are teaching the physics of combustion and explosion as a separate course. Thermal decomposition and combustion of explosives is dealt with by K. K. Andreev in Termicheskoe razlozhenie i gorenie vzryvchatykh veshchestv, 1957.

The important subject of geophysics is represented by such works as *Radiotekhnika* v aerologii, Leningrad, 1957, a text by V. S. Khakhalin on radio engineering in aerology

for students of hydrometeorological technical schools; Veter i vetrotekhnika, a book by M. V. Kolodin, published in Ashkhabad in 1957 by the Institute of Physics and Geophysics of the Turkman Academy of Sciences, which deals with the general principles of wind as a source of power and with wind conditions in the Turkmen SSR; Vozdushnyi okean i ego zhizn' (The Air Ocean and Its Life), by N. V. Kolobkov, published in its second revised and expanded edition in 1957, which consists of chapters on the atmosphere, the menacing forces of the atmosphere, and unusual phenomena of the earth's atmosphere, and includes new material based upon observations conducted during the winter of 1955 and the spring of 1956; and Meteorologiia, 1957, a textbook for students of hydrometeorological technical schools, written by G. P. Dubinskii, I. I. Gural'nik, and S. V. Mamikonova.

Written particularly for the use of scientists in the fields of meteorology, hydrology, and oceanography, N. A. Belinskii's Ispol'zovanie nekotorykh osobennostei atmosfernykh protsessov dlia dolgosrochnykh prognozov, Leningrad, 1957, deals with the utilization of some peculiarities of atmospheric processes for long-range forecasting. The book was sponsored by the Central Forecasting Institute of the Main Administration of the Hydrometeorological Service of the Council of Ministers of the USSR. A collection of 17 articles written by different authors on the Russian geographer and meteorologist, A. I. Voeikov (1840-1916), was edited by M. I. Budyko and published under the title, A. I. Voeikov i sovremennye problemy klimatologii (A. I. Voeikov and Modern Problems of Climatology), 1956.

An important reference book on the variable magnetic field of the USSR, Spravochnik po peremennomu magnit-nomu poliu SSSR, Leningrad, 1954, was published by the Scientific Research Insti-

tute on Earth Magnetism of the Main Administration of the Hydrometeorological Service and edited by V. I. Afanas'eva. The book contains information on the most important phenomena of the earth's variable magnetic field as determined by magnetic observatories from 1938 to 1948. Included in this work is material on cyclic (11-year) geomagnetic variations, annual variations, and 24-hour variations connected with magnetic storms, as well as other material on magnetic phenomena.

All the papers written by Academician A. N. Zavaritskii on the subject of meteoritics from 1944 until his death in 1954 were published in chronological order by the Committee on Meteorites of the Academy of Sciences of the USSR under the title, Raboty po meteoritike, 1956.

The noted astrophysicist, B. A. Vorontsov-Vel'iaminov helps fill a gap in Soviet writing with his book on the history of astronomy in Russia, *Ocherki istorii astronomii v Rossii*, 1956. This volume of historical esays covers the period up to the October Revolution in 1917. The author intends to publish a separate volume for the Soviet period.

In the important field of radioastrophysics a number of original works were received by the Library. I. S. Shklovskii, in Kosmicheskoe radioizluchenie (Cosmic Ray Radiation), 1956, attempts to summarize the results of research conducted over the past 25 years in the field of cosmic radiation. The book's nine chapters cover material dealing with receivers and antennas used in radioastronomy, the basic results of cosmic ray observations, the origin of cosmic rays and the nature of galaxy, monochromatic galaxy, and metagalaxy radiation.

There is also the work of G. A. Gurzadian, Radioastrofizika (Radioastrophysics), which was published in Erevan in 1956 under the sponsorship of the Armenian SSR Academy of Sciences. This book is

based mainly upon the lectures the author delivered at the University of Erevan. In an allied field, V. V. Sobolev wrote Perenos luchistoi energii v atmosferakh zvezd i planet (Radiation Transfer in the Atmosphere of the Stars and Planets), 1956. According to the introduction, the material in the last seven chapters of the book is based upon the author's own research and some of the results of this research are published here for the first time.

The Academy of Sciences of the Kazakh SSR at Alma-Ata is publishing in five volumes the basic works of one of its members, G. A. Tikhov, under the title Osnovnye trudy. Only two volumes have been received by the Library. The first, published in 1954, is devoted to astrophysics and gives works produced between 1897 and 1919; the second, published in 1955, deals with astrophysics and atmospheric optics and includes papers written between 1910 and 1945.

L. I. Dorman's Variatsii kosmicheskikh luchei, 1957, was written for research workers and graduate students in the field of cosmic rays. The author deals with experimental and theoretical methods of investigating temporary changes in the intensity of cosmic rays. The existing hypothesis of the origin of cosmic variations and their connection with various geophysical and astrophysical phenomena are examined. The properties of solar corpuscular streams and the electromagnetic conditions in the vicinity of the earth in the atmosphere of the sun, in interplanetary space, and in the galaxy are given special attention.

Another work of importance on this subject is Fizika solnechnykh korpuskuliarnykh potokov i ikh vozdeitvie na verkhniuiu atmosferu zemli (Physics of Solar Corpuscular Streams and Their Influence on the Upper Atmosphere of the Earth), 1957. This volume, edited by an editorial board headed by S. M. Poloskov, includes all the

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The subject of diffraction of electromagnetic waves on some rotating bodies is treated in a small publication entitled Diffraktsiia elektromagnitnykh voln na nekotorykh telakh vrashcheniia, 1957, which consists of four papers written by V. A. Fok, M. G. Belkina, and L. A. Vainshtein. Three of the papers were written by Belkina, one in collaboration with Vainshtein.

L. D. Gol'dshtein and N. V. Zernov, in Elektromagnitnye polia i volny, 1956, discuss the theory of the electromagnetic field, including stationary and high-frequency fields, problems of radiation and propagation of electromagnetic vibrations in waveguides, resonators, and other guidance systems. They also deal with the special problems involved in computing wave-guide systems. Although the book was written to conform with the curriculum of higher schools of radio engineering, it actually is sufficiently advanced so that it can be used by graduate students and engineers.

The publishing house of Sovetskoe Radio (Soviet Radio) posthumously published a book by the late scientist and specialist in radio engineering, A. G. Arenberg (1905-1957). His work, entitled Rasprostranenie detsimetrovykh i santimetrovykh voln, 1957, deals with the basic problems connected with the propagation of decimetric and centimetric waves (microwaves) under various conditions. Some computation formulas and other information of a practical nature are included. Another work published by Sovetskoe Radio, Magnitnye usiliteli (Magnetic Amplifiers), 1956, by M. A. Rozenblat, replaces an earlier, now outdated work by the same author which was printed in 1949.

The same publishing house brought out A. B. Ivanov and L. N. Sosnovkin's book on pulse super-high frequency transmitters, Impul'snye peredatchiki SVCh, 1956, which was written for the use of radio engineers and students of radio engineering. It should be noted that in Russian terminology the term sverkhvysokaia chastota, which is translated literally as "super-high frequency," applies to all frequencies above 30 megacycles, which differs from American usage. Nonlinear and parametric phenomena in radio engineering are treated by A. A. Kharkevich in Nelineinye i parametricheskie iavleniia v radiotekhnike, 1956.

Transistors are the subject of I. G. Gurevich and M. M. Simkin's book, Kristallicheskii triod i ego primenenie, published in Minsk in 1957 by the Institute of Power Engineering of the Belorussian Academy of Sciences. The publishing house of the Defense Ministry of the USSR released the second and revised edition of V. I. Siforov's Radiopriemniki sverkhvysokikh chastot (Radio Receivers of Super-High Frequency) in 1957. The author wrote it primarily for the use of students in military colleges and higher military schools, and for radio engineering personnel of various branches of the armed forces.

Super-high frequency electronic devices are dealt with by S. D. Gvozdover in his impressive university manual, *Teoriia elektronnykh priborov sverkhvysokikh chastot*, 1956.

V. F. Anisimov wrote his booklet, Dal'nii priem televideniia, 1956, for radio amateurs interested in long-distance television receiving. A popular treatment of the basic laws of photoelectric effects as they apply to picture transmission, television, and sound movies is provided by S. V. Savchenko in a pamphlet entitled Foto-

elektricheskii effekt i ego tekhnicheskie primeneniia, 1956.

A radio repair and tuning manual, Radioveshchatel'nye lampovye priemniki: remont i nalazhivanie, written by E. A. Levitin for repairmen and amateurs, was revised and expanded for its 1957 edition. Thorough coverage of the repair of equipment of all types of radio installations is provided by K. G. Arutiunov, I. I. Vordzilovskii, and N. R. Peresun'ko in Remont radiotekhnicheskikh sredstv, 1956, which was issued by the Publishing House of the Ministry of Defense of the USSR. The same publishing house put out G. A. Zisman's Rabotaiushchie elektrony in 1956, in which are described for popular consumption the physical phenomena which occur in electrical and electronic equip-

The USSR Academy of Sciences sponsored the publication of A. F. Joffe's book on semi-conductors, Fizika poluprovodnikov, 1957, a revised and expanded edition of his earlier Poluprovodniki v sovremennoi fizike, 1955.

K. N. Trofimov's pamphlet, Radiolokatsiia (Radar), 1957, appeared in the first issue of Radiolokatsionnaia tekhnika (Radar Engineering), a new series put out by the Publishing House of the Ministry of Defense of the USSR. Thirty-two pamphlets have been scheduled to appear in this series, which is addressed primarily to military officers connected with the operation of radar installations and to readers who are interested in different phases of the operation of radar stations.

Chemistry

In the field of chemistry the Library's accessions include books dealing, on all levels of learning, with the theoretical and practical aspects of chemistry.

Kharkov University published I. N. Bulankin's textbook on physical and colloidal chemistry, Fizicheskaia i kolloidnaia

khimiia, 1957, for students of biology. The lectures on theoretical problems of organic chemistry delivered by O. A. Reutov at Moscow University were expanded and published by the university under the title Teoreticheskie problemy organicheskoi khimii, 1956. Khimicheskaia tekhnologiia voloknistykh materialov, 1956, was written by F. I. Sadov, M. V. Korchagin, and A. I. Matetskii as a text in conformance with the curriculum for the course in chemical technology of fibrous materials taught in higher textile schools. The book, which was revised and expanded for this second edition, is recommended as a manual for textile engineering personnel.

As a manual for state universities, M. I. Shakhparonov prepared an introduction to the molecular theory of solution entitled *Vvedenie v molekuliarnuiu teoriiu rastvorov*, 1956. The Academy of Sciences of the Ukrainian SSR published *Stroenie i kristallizatsiia zhidkosti*, Kiev, 1956, containing selected works of V. I. Danilov on the structure and crystallization of liquids.

B. M. Kedrov's work on the evolution of the concept of the element in chemistry, Evoliutsiia poniatiia elementa v khimii, 1956, was prepared especially for secondary-school teachers of chemistry and for other educators interested in the subject. The first volume of Izbrannye trudy, the selected works of the noted chemist V. G. Khlopin (1890-1950), was published by the V. G. Khlopin Radium Institute of the Academy of Sciences of the USSR. Volume 1, entitled Trudy v oblasti radiokhimii, 1957, consists of his work in the field of radiochemistry; the second will include his writings on inorganic and analytical chemistry, geochemistry, and radiogeology.

The third edition of S. E. Bresler's Radioaktivnye elementy (Radioactive Elements), 1957, was revised considerably to include experimental data declassified after the International Conference at Geneva in 1955. Among the significant revisions is istry of a new fission for

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From among the large number of publications dealing with the processing of petroleum and petroleum products a few have been selected as representative.

The Institute of Petroleum of the Academy of Sciences of the Azerbaijan SSR published Issledovaniia v oblasti pererabotki tiazhelykh neftianykh ostatkov i khimicheskogo ispol'zovaniia ee produktov in 1957. This consists of a collection of M. F. Nagiev's papers dealing with research concerning the processing of heavy petroleum residues and the chemical utilization of the resulting products.

The Ministry of Petroleum Industry of the USSR published the transactions of a conference held in July 1955 on the chemical composition and operational characteristics of lubricating oils. This consists of 12 papers and is entitled Khimicheskii sostav i ekspluatatsionnye svoistva smazochnykh masel; trudy soveshchaniia, 1957. The two-volume collective work, Motornye topliva, masla i zhidkosti, edited by K. K. Papok and E. G. Semenido, was revised for its third edition. The contributions of 15 specialists in the field of fuels, oil, lubricants, and other fluids used for aircraft, automobile, tractor, and ship engines are included in this work. The first volume, Motornye topliva, 1957, deals with motor fuels, and the second, Masla, konsistentnye smazki i zhidkosti, 1957, with oil, greases, and fluids.

A collection of 73 standards established for reagents and auxiliary materials used in the chemical analysis of petroleum products was published in 1956 under the title Nefteprodukty, reaktivy i vspomogatel'nye materialy primeniaemye pri analize. Another official publication containing industrial standards, Nefteprodukty i produkty

pererabotki tverdykh topliv; tekhnicheskie usloviia, contains standards and specifications for petroleum products and for the processed products of solid fuel.

S. M. Katchenkov, in his work in the field of geochemistry, Spektral'nyi analiz gornykh porod, Leningrad, 1957, deals with spectral analysis of rocks. He describes the use of the spectroscope under varying conditions in both permanent and field laboratories of geological prospecting organizations. Although written especially for the use of spectroscopists, the publishers recommend the book to geologists, geochemists, and to students specializing in geological prospecting.

The chemical analysis of mineral raw materials and natural resources such as rock products, ores, natural waters, and salt brines is the subject of the collective work, *Analiz mineral'nogo syr'ia*, 1956. IU. N. Knipovich and IU. V. Morachevskii edited the book and 16 scientists contributed to it.

The first volume of the 3-volume work, Mineralogiia polimetallicheskikh mestorozhdenii rudnogo Altaia, was published in 1957 by the Academy of Sciences of the Kazakh SSR. The entire work will be devoted to the study of the mineralogy of the ore deposits of the Altaia complex. This volume, written by B. I. Veits, I. V. Pokrovskaia, and G. P. Bolgov, deals with elements, sulphites, and sulphosalt. In order to make this a comprehensive work, the authors used information from published sources as well as data based upon the experimental work carried on by them over a period of 10 years.

Ten geologists contributed to a collection of 14 articles on modern methods of mineralogical research in rocks, ores, and minerals. The publication, entitled Sovremennye metody mineralogicheskogo issledovaniia gornykh porod, rud i mineralov, 1957, was edited by E. V. Rozhkova

and sponsored by the All-Union Scientific Research Institute of Mineral Raw Materials (VIMS) of the Ministry of Geology and Conservation of Mineral Resources. I. I. Ginzburg's book, Opyt razrabotki teoreticheskikh osnov geokhimicheskikh metodov poiskov rud tsvetnykh i redkikh metallov, 1957, concerns the application of theoretical principles in prospecting for nonferrous and rare metals in ores. The author made use of material gathered by his associates and himself as well as of papers presented at the 1956 All-Union Conference on Geochemical Prospecting.

Uranium prospecting is the subject of V. G. Melkov and L. Ch. Pukhal'skii's book, *Poiski mestorozhdenii urana*, 1957. The authors also point out that radiometric methods and other techniques used in prospecting for uranium can be used when searching for rare metals such as phosphorites, titanium, and zirconium.

Another work concerning uranium metals is the handbook by M. V. Soboleva and I. A. Pudovkina, *Mineraly urana*, 1957.

Technology

The proceedings of the scientific session which was held on April 23–27, 1955, on the anniversary of the formation of the Academy of Sciences of the Azebaijan SSR, were published in 1957 in one volume entitled Desiat' let Akademii nauk Azerbaidzhanskoi SSR. The book was edited by an editorial board under the chairmanship of M. M. Aliev and, in addition to four scientific papers read at the meeting, contains 47 articles presented by four sections of the Academy (those of Geophysical and Chemical Sciences, Physical and Engineering Sciences, Biological and Agricultural Sciences, and Social Science).

L. D. Belyi discusses the basic problems of the theory and practice of engineering geology in hydropower installation construction in his book, Osnovnye voprosy teorii i praktiki inzhenernoi geologii v gidroenergostroitel'stve 1957. R. F. Gekker's introduction to paleoecology, Vvedenie v paleoekologiiu, 1957, was written for paleontologists and geologists. A more comprehensive work designed to be used as a manual, Paleobotanika (Paleobotany), Leningrad, 1957, was written by A. N. Krishtofovich and is now in its fourth revised edition.

The first volume of a reference tool for metallurgists, Spravochnik metallista, was published in 1957 under the editorship of S. A. Chernavskii. It contains basic information on mathematics, heat engineering, electrical engineering, optics, and acoustics, and material on tolerances and measurements. The entire work is being prepared under the direction of an editorial board headed by N. S. Acherkan. Volume 2 will deal with the subject of metallic strength and machine parts; volume 3 with metals and other material used in machine building; and volumes 4 and 5 with metal-working and -processing. The entire work has been based mainly on A. P. Znamenskii's Spravochnik metallista, which appeared in its seventh edition in 1937.

Metallurgical research workers may find A. E. Krivosheev's book on cast rollers, Litye valki, teoreticheskie i tekhnologicheskie osnovy proizvodstva, 1957, interesting.

V. B. Gokun's Tekhnologicheskie osnovy konstruirovaniia v mashinostroenii (Technological Principles in Machine-Building Design), 1957, was written for designers in this field. The experience gained at the Siberian Heavy Machine-Building Plant in the design and construction of bridge cranes of great lifting capacity is reported in A. B. Vernik's Mostovye krany bol'shoi gruzopod"emnosti, Sverdlovsk, 1956. A reference book on production control in machine building, Spravochnik po proiz-

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vodstvennomu kontroliu v mashinostroenii, Leningrad, 1956, was edited by A. K. Kutai and compiled by K. I. Abadzhi, A. N. Boitsov, F. P. Volosevich, and others.

Prepared for students of departments of mechanical engineering of higher agricultural schools, Traktory i avtomobili, 1957, edited by V. N. Boltinskii, is a manual on tractors and automobiles. V. N. Prokof'ev, in his Osnovy teorii gidromekhanicheskikh peredach, 1957, deals with the principles of the theory of hydraulic transmissions. This was prepared in accordance with the curriculum requirements of students specializing in the design of mechanical power engines. It is also recommended by the publishers to scientific research workers and industrial designers.

The design, construction, operation, and maintenance of airplane engines are described in a number of manuals, textbooks and pamphlets, a few of which are indicated here. G. V. Senichkin's Konstruktsiia i ekspluatatsiia dvigatelia M-11FR, 1956, which deals with the design, servicing, and operation of the M-11FR engine, was prepared for cadets of military aviation schools. Turbojet testing is the subject of V. A. Tiutiunov's Ispytaniia turboreaktivnykh aviatsionnykh dvigatelei, 1956, which was written as a manual for students of aviation technical schools.

The regulation of gas-turbine and ramjet engines is described by L. A. Zalmanzon and B. A. Cherkasov in a manual entitled Regulirovanie gazoturbinnykh i priamotochnykh vozdushno-reaktivnykh dvigatelei, 1956. Another manual on the same level, Tekhnologiia aviadvigatelestroeniia (The Technology of Aviation Engine Construction), 1957, was written by A. V. Podzei, A. M. Sulima, V. P. Firago, and I. S. TSukanov. Methods of analyzing processes in the combustion chamber and in the nozzle of liquid-fuel rocket engines are discussed by A. V. Bolgarskii in Raschet protsessov v kamere sgoraniia i sople zhidkostnogo raketnogo dvigatelia, 1957.

L. K. Baev, in his pamphlet, Reaktivnaia tekhnika nashikh dnei, 1956, deals with modern jet engineering. It is part of the "Schoolboy Library" series for students of secondary schools. In another popular pamphlet, O vozmozhnosti mezhplanetnykh poletov, Alma Ata, 1956, G. SH. Livshits discusses the possibility of interplanetary flight.

In honor of the fortieth anniversary of the October Revolution, the Moscow Institute of Power Engineering is publishing a three-volume history of power engineering in the USSR, entitled Istoriia energeticheskoi tekhniki SSSR. Volume 1, which deals with the history of heat engineering, was published in 1957. Volumes 2 and 3 will contain the history of hydropower and electric power, respectively. Fourteen authors under the editorship of I. IA. Konfederatov contributed material to the first volume.

Professor IU. M. Leibfreid's textbook for civil engineering students, *Tekhnologiia* stroitel'nogo proizvodstva, 1957, is a systematic study of civil engineering construction.

V. V. Meshkov's lectures on light engineering, which he delivered at the Moscow Institute of Power Engineering, form the basis of his manual, *Osnovy svetotekhniki*. The first part of this work, published in 1957, has been received.

Engineers and researchers in the field of electrical engineering may find of interest Rezonans v elektricheskikh tsepiakh i sistemakh, 1957, A. I. Dolginov's work on resonance in electric networks and systems. The first part of the official publication, Kabeli, provoda i shnury elektricheskie, published in 1956, contains industrial standards for electric cables, conductors,

and cords. An important work dealing with electrical micromachinery of automation systems, *Elektricheskie mikromashiny avtomaticheskikh ustroistv*, 1957, was written by IU. S. Chechet. The author describes basic types of electrical micromachines for automatic systems such as

servomotors, tachometer generators, induction voltage regulators, and synchros. He also discusses the theoretical and practical problems involved in using micromachinery in automation systems.

JAMES J. VULFSON
Reference Department

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SOME RECENT PUBLICATIONS OF THE LIBRARY OF CONGRESS

Africa South of the Sahara; a Selected, Annotated List of Writings, 1951-1956. Compiled by Helen F. Conover. 1957. 269 p. For sale by the Card Division, Library of Congress, Washington 25, D. C. Price \$2 a copy. This selected bibliography, prepared by the General Reference and Bibliography Division, is the first of two volumes which will bring up to date Introduction to Africa, the reading guide that was published in 1952.

Captain John Smith's Map of Virginia. A facsimile reproduced from an engraving in the Library of Congress collections and accompanied by a 4-page brochure of the same title. 1957. For sale by the Card Division, Library of Congress, Washington 25, D. C. Price \$1.75 a copy. (Checks should be made payable to the Treasurer of the United States.) Produced by collotype on fine, imported paper, this facsimile measures approximately 16x19 inches and is suitable for framing. The accompanying brochure on the history and importance of the original map was written by Walter W. Ristow, Assistant Chief of the Map Division.

Catalog of the 15th National Exhibition of Prints Made During the Current Year. 1957. 12 p. Free upon request to the Office of the Secretary, Library of Congress, Washington 25, D. C.

Checklist of Hearings before Congressional Committees
Through the Sixty-Seventh Congress, Part IV.
Compiled by Harold O. Thomen. 1957. 122
p. For sale by the Card Division, Library of
Congress, Washington 25, D. C. Price \$1 a
copy.

——, Part V. Compiled by Harold O. Thomen, 1957. 130 p. For sale by the Card Division, Library of Congress, Washington 25, D. C. Price \$1 a copy.

Classification Schedules:

Class P. Philology and Literature:

Subclasses PB-PH: Modern European Languages. 226 p. 1933, reprinted 1957 (with 26 supplementary pages). For sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Price \$2 a copy. Subclasses P-PM, Supplement: Index to Languages and Dialects. 71 p. Second edition, 1957. For sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Price 55 cents a copy.

Subclass PQ, Part 1: French Literature. 185 p. 1936, reprinted 1957 (with 11 supplementary pages). For sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Price \$1.50 a copy.

Subclass PT, Part 1: German Literature. 312 p. 1938, reprinted 1957 (with 11 supplementary pages). For sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Price \$2.25 a copy.

A Provisional Bibliography of United States Books Translated into Spanish. Compiled by the Hispanic Foundation. 1957. 471 p. For sale by the Card Division, Library of Congress, Washington 25, D. C. Price \$3.35 a copy. This compilation, no. 3 in the Hispanic Foundation Bibliographical Series, is similar to its counterpart, A Provisional Bibliography of United States Books Translated into Portuguese (no. 2 of the series), which was issued earlier this year.